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The Early History of Woodland Caribou (*Rangifer tarandus caribou*) in British Columbia

by
D.J. Spalding

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British Columbia, Canada's most westerly province, has a bounty of biological diversity. British Columbia's snowclad peaks, rain-drenched forests, arid grasslands, all sizes of rivers, lakes, and wetlands, and a long and rugged coast provide habitats for more species of living organisms than are found anywhere else in Canada. However, this very diversity means that there is much to be discovered about these organisms — their distribution, abundance, habitat requirements, and interrelationships with their environment. Increasing our knowledge of this biodiversity will help us with the complex task of sustainably managing our land and waters.

In 1992, the Provincial Government initiated a co-operative biodiversity research program with funding from the Corporate Resource Inventory Initiative, the British Columbia Ministries of Forests (Research Branch), Environment, Lands, and Parks (Wildlife and Habitat Protection Branches), and Tourism and Culture (Royal B.C. Museum), and the Forest Resource Development Agreement (FRDA II).

In 1995, the Ministry of Forests Research Branch and the Ministry of Environment, Lands and Parks developed a biodiversity research and extension strategy, with the assistance of the provincial research community. This strategy was presented to Forest Renewal BC (FRBC), who provided funding for a program beginning in 1995. The goal of the extension component of this program is to extend information to scientists, resource managers, and the public through biodiversity publications. These publications are intended to increase awareness and understanding of biodiversity, promote the concepts and importance of conserving biodiversity, and communicate provincial government initiatives related to biodiversity. We hope that they will be used as tools for the conservation of British Columbia's rich, living legacy.

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THE EARLY HISTORY OF WOODLAND CARIBOU *(Rangifer tarandus caribou)* IN BRITISH COLUMBIA

by
David J. Spalding

BRITISH COLUMBIA

Ministry of Environment, Lands and Parks
Wildlife Branch
Victoria BC

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ABSTRACT

Woodland Caribou (*Rangifer tarandus caribou*) have ranged throughout the mountains of British Columbia for approximately 10,000 years, arriving quickly behind the retreating ice of the last ice age. Today their numbers and distribution are reduced, even from early historical times. There are three distinct groups, or ecotypes: the northern ecotype (relying heavily on terrestrial lichens for food), the mountain ecotype (feeding more on arboreal lichens than their northern counterpart) and the boreal ecotype, few in number and restricted to the lowlands of the extreme north-east of the province. Northern caribou are found in the Northern Boreal Mountain, Boreal Plains, Sub-boreal Interior, Central Interior and Coast and Mountain ecoprovinces. Their numbers and distribution in the Northern Boreal Mountains probably changed little over historical times, at least until about 1970; elsehere, however, northern caribou have experienced a decline in numbers and a reduction in distribution. Mountain Caribou are found in the Southern Interior and Southern Interior Mountains ecoprovinces, and in the south-east portion of the Sub-boreal Interior and on the eastern edge of the Central Interior ecoprovinces. The decline in Mountain Caribou numbers and distribution has been more pronounced than in the northern ecotype, particularly in the Okanagan and throughout the Kootenays. Boreal Caribou have probably changed little in number or distribution during historical times. The initial series of declines in Caribou numbers began around the turn of the century in the extreme south-east of the province and ended in the early 1940s in the Cariboo. The evidence suggests a combination of over-hunting, often in combination with wolf predation, caused these initial reductions. Following control of hunter harvest and wolf numbers, Caribou began to increase slowly. However, by the 1950s and 1960s, habitat degredation and habitat loss were of growing importance and Caribou never increased to pre-decline levels.

Dawson's Caribou (*Rangifer tarandus dawsoni*) arrived early on the Queen Charlotte Islands, probably 9–10,000 years ago, either by crossing on a land bridge or swimming a narrow channel. A slowly changing climate, particularly during the last 2000 years, created an environment unsuitable for Caribou and that sub-species is now extinct.

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The Queen Charlotte Island Caribou have been a challenge and I received assistance from experts in several fields and I gladly acknowledge their help: John Clague with geology and the last ice age, Steve Acheson with Queen Charlotte Island archaeology and Haida history, David Nagorson with ideas on island populations as well as help with both the museum specimens and taxonomy, Yorke Edwards with his interest in the Charlotte Caribou as well as editorial suggestions. The British Columbia Archives and Record Service gave permission to use the photo of White and Yoemans with the Caribou they collected in 1908. I would also like to thank Dr. Ian McTaggart-Cowan who gave encouragement quite early on.

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TABLE OF CONTENTS

1.0 INTRODUCTION 1
2.0 METHODS 2
3.0 PREFERRED HABITAT 4
4.0 RESULTS 4
4.1 Northern Caribou 4
4.1.1 Northern Boreal Mountains Ecoprovince 4
4.1.2 Boreal Plains and Sub-boreal Interior Ecoprovinces 7
4.1.3 Coast and Mountains Ecoprovince 10
4.1.4 Central Interior Ecoprovince 10
4.2 Mountain Caribou 16
4.2.1 Southern Interior Ecoprovince 16
4.2.2 Southern Interior Mountains Ecoprovince 17
4.2.3 Sub-boreal Interior Ecoprovince 29
4.3 Boreal Caribou 29
4.3.1 Taiga Plains Ecoprovince 29
5.0 DISCUSSION 30
5.1 Distribution 30
5.2 Abundance 30
5.3 Changes in Abundance 30
5.3.1 Northern Caribou 30
5.3.2 Mountain Caribou 33
5.3.3 Boreal Caribou 34
5.4 Threats to Caribou 34
5.4.1 Habitat loss from logging 34
5.4.2 Habitat loss from fire 36
5.4.3 Predation 36
5.4.4 Hunting 38
5.4.5 Weather and disease 39
5.4.6 Land Use 40
6.0 CONCLUSION 40
7.0 REFERENCES 41
APPENDIX A. THE QUEEN CHARLOTTE ISLAND CARIBOU 54

LIST OF FIGURES

Figure 1. Ecoprovinces of British Columbia 3
Figure 2. Ecosections in the Northern Boreal Mountains Ecoprovince 5
Figure 3. Historical observations of Northern Caribou in the ecosections of the Boreal Plains and the Sub-boreal Interior Ecoprovinces 9
Figure 4. Historical observations of Northern Caribou in two ecosections of the Coast and Mountains Ecoprovince 13

Figure 5. Historical observations of Northern Caribou in the ecosections of the Central Interior Ecoprovince 14
Figure 6. Historical observations of Mountain Caribou in the ecosections of the Southern Interior Ecoprovince 18
Figure 7. Historical observations of Mountain Caribou in the ecosections of the Southern Interior Mountain Ecoprovince, plus the Cariboo Plateau and MacGregor Plateau, Hart Ranges, and Front Ranges ecosections of the Sub-Boreal Interior Ecoprovince 19
Figure 8. Distribution of Caribou in British Columbia in 1999 31
Figure 9. Historical distribution of Caribou in British Columbia 32
Figure 10. Historical abundance of Caribou in British Columbia 35
Figure 11. Suggested population changes for certain Caribou populations from 1900 to 1970 37
Figure A-1. Queen Charlotte Islands and a portion of the mainland and associated islands 54
Figure A-2. Mathew Yoemans and Henry White at Massett with two of the three Caribou they shot in November 1908 57

LIST OF TABLES

Table 1. Historical Caribou observations on the Kluane Plateau, Teslin Plateau, Tuya Range, Stikine Plateau, Liard Plain 4
Table 2. Historical Caribou sightings on the Southern Boreal Plateau 5
Table 3. Historical Caribou observations in the Cassiar Ranges 6
Table 4. Historical Caribou observations in the western part of the Northern Boreal Mountains 6
Table 5. Historical observations of Caribou in the mounatins east of the Finlay River 7
Table 6. Historical observations of Caribou in northern British Columbia 7
Table 7. Historical observations of Northern Caribou in the Hart Foothills, Hart Ranges, Peace Lowland, Kiskatinaw Plateau 8
Table 8. Historical Caribou observations in the Eastern Skeena Mountains, Southern Skeena Mountains, Manson Plateau, Babine Uplands and Southern Omineca Mountains 10
Table 9. Historical observations of Caribou in the Nechako Lowlands 11
Table 10. Historical observations of Caribou in the Nass Ranges 11
Table 11. Historical observations of Caribou in the Kitimat Ranges 11
Table 12. Historical observations of Caribou in the Bulkley Ranges 12
Table 13. Historical observations of Caribou in the Bulkley Basin 12
Table 14. Historical observations of Caribou in the Nechako Upland 15
Table 15. Historical observations of Caribou in the Western Chilcotin Uplands 15
Table 16. Historical observations of Caribou in the Chilcotin Plateau, Western Chilcotin Ranges, Central Chilcotin Ranges and Nazko Uplands ecosections 16
Table 17. Historical observations of Caribou in the Northern Thompson Upland and Southern Thompson Upland 17
Table 18. Historical observations of Caribou on the Northern Okanagan Highland 17
Table 19. Historical observations of Caribou in the south Kootenays 20
Table 20. Historical observations of Caribou in the Eastern Purcell Mountains 20
Table 21. Historical observations of Caribou in the Selkirk Foothills 21

Table 22. Historical observations of Caribou in the Central Columbia Mountains 21
Table 23. Historical observations of Caribou in the Northern Kootenay Mountains 22
Table 24a. Historical observations of Caribou in the Shuswap Highland, southern section 23
Table 24b. Historical observations of Caribou in the Shuswap Highland, northern section 24
Table 25. Historical observations of Caribou in the Cariboo region 25
Table 26. Historical observations of Caribou on the Cariboo Plateau and in the Quesnel Highland ecoregions 25
Table 27. Historical observations of Caribou in the Cariboo Mountains 26
Table 28. Historical observations of Caribou in the Bowron Valley 27
Table 29. Historical observations of Caribou in the Upper Fraser Trench 28
Table 30. Historical observations of Caribou in the Northern Park Ranges 28
Table 31. Historical observations of Mountain Caribou in the Front Ranges, the southern Hart Ranges and MacGregor Plateau 29
Table A-1. Ungulate remains uncovered in excavations on Graham Island 59

1.0 INTRODUCTION

Caribou have been a part of British Columbia's fauna for thousands of years. Although the retreat of ice in southern British Columbia at the end of the last ice age has not been precisely determined, it is thought to have occurred about 12,000–14,000 years BP (before present) (Hebda 1990). This author believes that Caribou, by their very nature, followed quickly behind the retreating ice cap. There is no record from British Columbia to confirm this conjecture, but Caribou remains found in a bog near Sequim on the Olympic Peninsula, Washington, have been aged at approximately 12,000 years BP (D. Nagorsen, pers. comm.). Further evidence of an early movement of Caribou into British Columbia comes from the Queen Charlotte Islands, which supported Caribou until the beginning of the 20th century. Caribou could have reached the Charlottes only by crossing a land bridge or swimming a narrow channel. The best evidence today suggests that either a bridge or a narrow channel existed about 10–11,000 years BP (see Appendix A for a brief history of Dawson's Caribou [*Rangifer tarandus dawsoni*]). There is also a record of a Caribou antler recovered from an ice field near Iskut, dated at about 2700 years BP (D. Blower, pers. comm.). North of British Columbia, in the southern Yukon, Caribou remains have been found on several permanent snow patches dated between 1000 and 7000 years BP (Kuzyk et al. 1998; Kuzyk 1999).

The importance of Caribou to native Indians during pre-historic times, and later their importance to some of the early fur traders, settlers and miners, cannot be over-emphasized. George Emmons, studying the Tahltan Indians in north-west British Columbia during the summers of 1904, 1905 and 1906, described their reliance on this ungulate: "the Caribou has always had first place in the economic life of the Tahltan . . . Indeed the Caribou was to the Tahltan what the buffalo was to the tribes of the plains" (Emmons 1911). The use of Caribou by other Indian tribes is discussed below. The Cariboo District of central British Columbia (spelled 'Caribou' in the early days) was named by the early miners: "The Gold Region of British Columbia. . . a district called Cariboo, a corruption of 'cerf-boeuf', a large species of reindeer which inhabits the country" (Anon 1975).

The Woodland Caribou inhabiting British Columbia today have been divided into three groups based on distribution, behaviour and habitat requirements: the mountain, northern and boreal ecotypes (Heard and Vagt 1998). The mountain and northern ecotypes are found in many of the mountainous regions of the province while the boreal ecotype is restricted to the forests of the north-east lowlands. Heard and Vagt (1998) have described 39 discrete herds of woodland Caribou: 12 herds of mountain Caribou in eastern British Columbia from the 49th parallel north to about the 55th parallel; and 27 northern Caribou herds ranging from the Itcha and Ilgachuz Mountains in the Chilcotin to the mountains of the northern half of the province, from west of Atlin to the Rocky Mountains. The boreal ecotype does not appear to form discrete herds but remains in small, dispersed groups throughout the year. Based on reliable estimates by regional biologists, there were about 16,500 Caribou in British Columbia in 1997 (I. Hatter, pers. comm.).

British Columbia's Caribou have raised issues of concern over the past twenty-five years, and several investigations have examined the contentious questions related to this species: Why are there fewer Caribou than there used to be? What caused the decline? What can be done to protect existing stocks? What can be done to increase numbers? Bergerud (1978) examined Caribou populations throughout the province in the 1970s; he included some historical information but his focus was on the present: distribution, numbers and recent population changes, with his interpretion of the changes he observed. Hatter (1979) carried out a general study of the Tweedsmuir herd, Bloomfield (1979) examined Caribou on the upper Fraser, Russell et al. (1982) studied the Kootenay Caribou; Stevenson and Hatler (1985) conducted an intensive investigation of woodland Caribou in southern and central British Columbia, including some early history, but their emphasis was on the present: population trends, numbers and distribution and the role that forest practices might play in the

life of woodland Caribou. During the 1980s and early 1990s, the Spatsizi Association for Biological Research, under the direction of Dave Hatler, studied Caribou in the Spatsizi Park area, and several reports dealing with inventory, habitat requirements and movement were completed. Bergerud and Elliot (1986) looked at the issue of wolf predation and northern Caribou; Seip (1992a and 1992b) reported on Caribou habitat and population status in the Quesnel Highlands, and the factors limiting Caribou in southeastern British Columbia, emphasizing the interrelationship between Caribou, moose and wolves; Seip and Cichowski (1996) examined the population ecology of Caribou throughout the province; MacDonald (1996) researched the history of mountain Caribou and summarized the range of human activities which may have affected their welfare; finally, Heard and Vagt (1998) provided a provincial status report to 1996.

2.0 METHODS

Written sources were relied upon for the bulk of the historical data: published material by early explorers and travellers in the province; scientific articles; unpublished documents located mainly in the British Columbia Archives and Records Service (Victoria), but also in the Legislative Library (Victoria), the Museum Library, Royal British Columbia Museum (Victoria), the Ministry of Environment Library (Victoria), and the Special Collection of the University of British Columbia Library in Vancouver. The Provincial Game Warden's Correspondence (part of the British Columbia Archives and Record Service collection) and early records from the Wildlife Branch (Ministry of Environment, Parks and Lands), both in Victoria and in the Regions, were also used.

There is no shortage of historical Caribou observations, and it has been necessary to find a procedure – both convenient and reliable – to organize and present this information. Heard and Vagt (1998) found that current Caribou herd distribution did not fit the Ecoregion Classification (based on climate and physiographic features) whereas it did fit the Biogeoclimatic Ecosystem Classification (based on climate and vegetation). Despite their findings, this author has chosen to list these historical observations by the ecosections described in the Ecoregion Classification (Demarchi 1995) (Figure 1). The sightings fit fairly well into these ecosections (that is, Caribou have been seen where one might expect to find them in the ecosections) and the ecosections describe areas small enough to provide a convenient breakdown for the volume of data. Needless to say, it is unusual to find a perfect fit of sightings and ecosection boundaries and some adjustments were made. In some cases, when there are few references, ecosections were combined; in other instances, when the observations are too general to locate in a single ecosection, an area encompassing several ecosections is described; and in one instance, a single ecosection is divided into two.

Many tables in this historical account are composed of selected data. Because of the quantity of information, some selection was necessary and most omitted material is repeat observations, adding nothing to an understanding of Caribou history. In some cases, single references to abundance (a 'scarce' or 'many') have become omitted, when this is inconsistent with observations from years immediately preceeding and following the omitted comment.

The maps describe past Caribou distribution and density based on the author's interpretation of the historical data. Individual sightings or observations, when not too general, have been plotted for all ecoprovinces but the Northern Boreal Mountains, where it is unlikely that Caribou distribution has changed noticeably over the past 200 years (Hatler 1987a).

Finally, the historical data is rarely, if ever, complete enough or precise enough to describe individual Caribou herds. The material is useful in providing the delineation of an earlier distribution and can, sometimes, suggest a relative density or a general population change. Because of this generality, it has been difficult to relate the historical with the present, and the more precise nature of our understanding of Caribou numbers

Figure 1. Ecoprovinces of British Columbia (Demarchi 1995).

and distribution today. Despite this, the author has tried to provide some relevancy to early history by ending the review when current information is available. Thus, the author has not used an arbitrary cut-off date but has ended the history when it seemed appropriate to the particular case. In general, this historical review ends about 1970.

3.0 PREFERRED HABITAT

Summering mountain and northern Caribou prefer alpine and sub-alpine zones in many of the mountains of British Columbia, often moving onto open snow patches: "rolling mountains, typically with extensive flats and gentle slopes near the tops, and sufficiently high to support extensive alpine meadows above treeline" (Edwards 1958). However, these two ecotypes are separated by their specific preferences for critical winter habitat. Northern Caribou, found in British Columbia's western mountains and throughout the northern mountain ranges north of about 55° latitude, winter both in mature forests and on open, wind-swept slopes, feeding mainly on terrestrial lichens but sometimes arboreal lichens. In contrast, mountain Caribou, found in the mountains of the Kootenays and the Cariboo north to about 55° latitude, rely heavily on high-, mid- and low-elevation forests during winter and spring, feeding mainly on arboreal lichens. The boreal ecotype, few in number and with limited distribution, remain in the boreal forests of the extreme northeast of the province throughout the year (Stevenson and Hatler 1985; Heard and Vagt 1998).

4.0 RESULTS

4.1 Northern Caribou

In this discussion of northern Caribou, records are described from the north-west to the east, then south to below the Peace River, west to the Coast Range, and then south again.

4.1.1 Northern Boreal Mountains Ecoprovince (Figure 2)

1. Teslin Plateau, Tuya Range and the Stikine Plateau

These three ecoregions include Tagish and Atlin Lakes, the upper Jennings River and east to Cassiar, the upper Teslin River and south to Telegraph Creek and surrounding country. This is a large area with many Caribou, but the historical references are few and the author has combined the comments; includes today's Atlin West, Atlin East, Jennings and Level/Kawdy herds and part of Little Rancheria, Cry Lake and Edziza herds (all references to herds from Heard and Vagt 1998).

The historical record, sparse as it is, suggests that Caribou were numerous when the first Europeans arrived but, in some areas at least, numbers had declined by the late 1930s and early 1940s.

2. Southern Boreal Plateau

The upper Spatsizi east to Thutade Lake; includes part of the Cry Lake herd and all the Spatsizi herd. Caribou were numerous in this ecosection when the early explorers first arrived; nothing in the record suggests any major change into the late 1950s. As Hatler (1987b) has noted, Tommy

Table 1. Historical Caribou observations on the Kluane Plateau (1), Teslin Plateau (4), Tuya Range (1), Stikine Plateau (1), Liard Plain (1)*.

Date	Location	Reference	Comments
Jan 6, 1888	Vic Taku Arm	Moore 1888	Caribou (and others) abundant
Summer 1892	Taku River	Gauvreau 1893	Abundant in Taku Indian hunting grounds
Nov 10, 1910	Vic Atlin	Moncrieffe 1910	Had seen 7 Caribou, killed one
1918	Dease R to Atlin	Scarlett 1918	Several bands between Dease and Jennings R; no Caribou close to Atlin within last few years
1918/1919	Telegraph Ck area	Swarth 1922	Many killed in mtns north and east of Telegraph Ck; 10–12 wintered on Glenora Mtn
1940s	Tatshenshini area	Sumanik and Harper 1973	Killed off by army personnel; a few starting to come back by early 1970s
1943	Watson Lk to Lower Post	Rand 1944	In years past Caribou "extremely plentiful"; recent years, "fairly common"

* numbers in brackets refer to number of observations

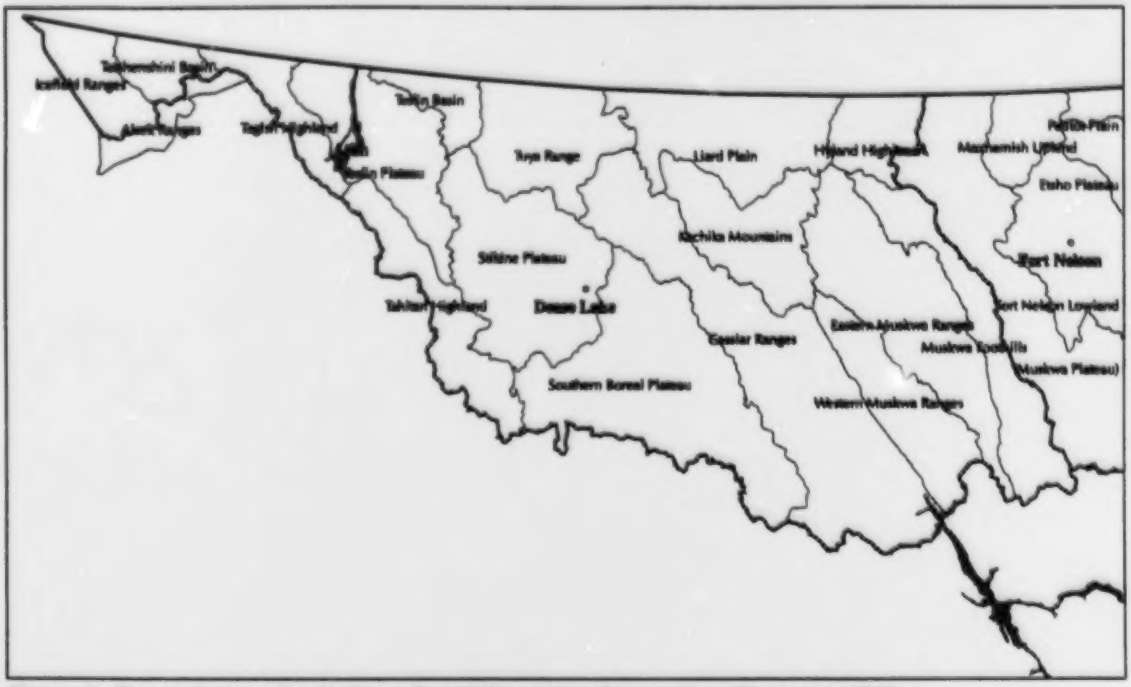


Figure 2. Ecosections in the Northern Boreal Mountains Ecoprovince (Demarchi 1995).

Walker's counts from the late 1940s and through the 1950s are probably unreliable as a precise inventory tool. However, they are all that is available today. Differing markedly each year (ranging from 329 in one 2-month period to 50 during the same 2-month period the following year), when plotted against time (Caribou/month by year), they suggest a relatively stable population – an inference that Caribou in the Spatsizi may not have fluctuated markedly during the 1950s.

3. Cassiar Ranges

Includes the upper Finlay River and northwest to the Dease River; all of Frog herd, parts of Cry Lake, Little Rancheria and Chase herds. The historical record suggests Caribou were widespread

Table 2. Historical Caribou sightings on the Southern Boreal Plateau.

Date	Location	Reference	Comments
Feb 1, 1865	Peak Range	Rothrock 1872	Caribou are "quite abundant"
Aug 1, 1892	E of Dease Lake	Pike 1896	"plenty of Caribou"
Summer 1914	Vic Groundhog and upper Spatsizi	Taylor 1914	Caribou "very numerous in the north and north-east portion"
Oct 22, 1914	Hdwtrs Stikine R	Dodd 1914	2300 Caribou counted by a hunting party (this incl. 10% adjustment for repeat sightings)
Fall 1915	Upper Nass	Studdy 1916	Plentiful within 2-day ride from upper Nass River
Fall 1916	Spatsizi vicinity	Williams 1916a	2-month hunt from Hazelton; "they must have seen close on to a thousand" Caribou
Early 1920s	Klappan River	Glynn-Ward 1926	"the land of the Caribou"; counted a herd of 50, then another of 100.
1930	Spatsizi	Walker 1976	Caribou in "large herds...plentiful"
1948	Spatsizi	Walker 1976	"everywhere we looked, we saw Caribou... hundreds of Caribou at the head of the Ross"
1949	Coldfish Lk area	Gill 1949	Large bands reported
1951	"	Gill 1951	Large bands
1948–1959	T. Walker's guide area in Spatsizi	Hatler 1987b	Counts by guide Tommy Walker ranging from 43 (2 months) to 550 (4 months)

Table 3. Historical Caribou observations in the Cassiar Ranges.

Date	Location	Reference	Comments
Summer 1824	All ecosection	Rich 1955	Samuel Black recorded Caribou and tracks regularly; no large herds; "plentiful" at head Liard River
Spring 1877	Upper Finlay	R Walkem 1914	Caribou and Caribou sign seen regularly; watched a wolf (*Canis lupus*) chase a Caribou
1908	McConnel Ck	Williams 1908a	"thousands of Caribou" reported in vicinity
Summer 1912	Ingenika River	Harvey 1912	Caribou present but not numerous
Summer 1914	Ingenika and upper Finlay R	Swannell 1914	Edge of Fishing Lakes "trampled like a barnyard by Caribou tracks"; saw small bands of Caribou on survey
Sept 1914	Vic Fort Ware	Swannell n.d.	Caribou seen several times
Summer 1948	Caribou Hide	Walker 1976	"Lots of Caribou twenty years ago"

but not necessarily abundant. Preble (1910) noted that prior to the mining of 1908, Caribou were common at McConnell Creek; hunting by miners either killed many Caribou, or they moved elsewhere. In 1948, Tommy Walker noticed a lack of game in the vicinity of the small Indian village of Cariboo Hide, and attributed this to the year-round hunting necessary to keep the residents in food for themselves and their dogs. The Indians told Walker that Caribou used to be abundant and their comments may have reflected a general decline or merely a decline near their village.

4. Northern Boreal Mountains – west

Many of those who wrote about the northwest in the early days often referred to the general area as the Cassiar or Stikine (sometimes spelled Stickeen). Rather than guess how these observations might fit into today's ecosections, the author has placed them within an area large enough to encompass the intent of this discussion. These reports confirm other, more specific, comments: Caribou were generally numerous from a time preceeding European contact and well into the 20th century.

5. Northern Boreal Mountains – east

(the Western Muskwa Ranges, Muskwa Foothills, Eastern Muskwa Ranges, Kechika Mountains, Liard Plains and the Hyland Highland ecoregions); also Parsnip Trench and Misinchinka ecoregions, Sub-boreal Interior. This large area includes the Finlay, Gataga, Kechika, Muskwa, Liard Plateau and Pink Mountain herds.

Indians who visited Fort Simpson in August 1828 reported that Caribou (and others) were abundant in their land west of the Rocky Mountains, which includes at least some of the ecoregions discussed in this section. There is no suggestion of any major change until the late 1940s and early 1950s, when the guides reported that Caribou numbers were down in the Pink Mountain and Prophet River

Table 4. Historical Caribou observations in the western part of the Northern Boreal Mountains.

Date	Location	Reference	Comments
Summer 1838	Liard and Dease Rs	Campbell n.d.	"very plentiful"; bands sometimes passed Dease Lk
1862	Stikine region	Anon 1862	Caribou "numerous"
Late 1800s	Tahltan territory	Emmons 1911	Caribou still "abundant"; Caribou hides at one time most important trade article with coastal Indians
Late 1800s	Cassiar district	Pike n.d.	"The typical and by far the most plentiful animal is the Caribou"
1886	Cassiar	Fannin 1886	Caribou are "the chief sport of the hardy miners who brave the long winters of Cassiar"
Summer 1887	Stikine, Dease and Liard Rivers	Dawson 1888	"the Caribou is everywhere common"; important food for the natives
1905	Cassiar district	Williams 1905a	"seem to have been especially plentiful this year"
1908	Cassiar district	Williams 1908a	"In Cassiar Caribou have been seen in great numbers...one band of 150 head has been seen"
1911	Cassiar district	Williams 1911a	"not quite as plentiful"
Fall 1914	Cassiar district	Williams 1914	Better than for several years; "one hunting party in Cassiar having seen some 1200 head [Caribou] in a few days hunting"
1920	Cassiar district	Baker 1921	Caribou "plentiful"

Table 5. Historical observations of Caribou in the mountains east of the Finlay River.

Date	Location	Reference	Comments
May 26, 1806	Nr Finlay Forks	Lamb 1960	Simon Fraser's party killed a Caribou
1828	W of Rocky Mtns	Rich 1947	Indians said their land "abounded...in Rein Deer"
Summer 1912	Ospika R	Harvey 1912	Evidence of Caribou but not numerous
1925	Upper Nelson R	Forfar 1925	"fair numbers" in mtns at head of Nelson River
Summer 1932	Laurier Pass	Sheldon 1932	Approx. 40 Caribou from Pass to hdwtrs Prophet R
1951	Fort St John to Ft Nelson	Gill 1951	Large bands reported
1949–1951	Pink Mtn-Prophet River	Bergerud 1978	Guides reported that Caribou numbers were low during these years
March 1968	"	"	1018 Caribou counted
Jan 17–19, 1969	"	"	2675 counted (largest single count recorded in BC)

area. This suggestion by the guides of reduced numbers during these years loses some validity in light of Inspector Gill's report, made at the time, of large bands from Fort St. John to Fort Nelson.

The 1969 count of 2675 Caribou (an aerial count by Canada Land Inventory staff over three days) is significant for its size, if for no other reason. There have been three very high counts recorded in British Columbia (the other two were on the headwaters of the Stikine River and at Isaac Lake) but this is the largest.

6. Caribou in the north – general

There are a series of very general reports about northern Caribou, referring to Caribou north of the 55th parallel and west of the Rocky Mountains.

These general observations from the Provincial Game Warden's Reports supply information, lacking elsewhere, for the 1920s – 1950s period. These data suggest that northern Caribou may have shown a brief decline in the mid- to late-1930s: deep snow, intense cold and wolf predation apparently caused severe losses. Caribou numbers increased during the 1940s. This argument receives some support from Tommy Walker's observations in the Spatsizi where he has provided reports of good Caribou numbers in 1930 and again in 1948, and probably remaining stable throughout the 1950s. Unfortunately, neither Walker nor anyone else has left first-hand observations from the mid-1930s to substantiate or deny the general observations made by the Game Commissioners. What happened later is also difficult to determine, although Bergerud (1978), after questioning northern guides, concluded that Caribou numbers declined to "moderate" throughout the 1940s and 1950s (differing from information in Table 6, increased to "abundant" in the 1960s and then declined again to "moderate" in the early 1970s.

4.1.2 Boreal Plains and Sub-boreal Interior Ecoprovince (Figure 3)

1. Part of Hart Ranges, all of McGregor Plateau, Hart Foothills, Kiskatinaw Plateau and Peace Lowland ecosections

Table 6. Historical observations of Caribou in northern British Columbia.

Date	Location	Reference	Comments
1923	North – general	McMullen 1923	"Large herds"
1924	"	McMullen 1924	"Increasing....large herds"
1927	"	McMullen 1927	Increasing
1928	"	McMullen 1928	"Quite numerous"
1929	"	Williams 1929	"Numerous and on increase"
1934	"	Cunningham *et al.* 1935	Severe winter weather and predation caused losses
1936	"	Cunningham *et al.* 1936	More losses because of weather and predation
1938	"	Butler and Cunningham 1938	Numbers down
1940	"	" 1940	Increasing
1943	"	" 1943	Increasing
1949	"	" 1949	"still a considerable number"
1956	"	Butler 1955	"a good increase" in mountains

This covers much of the drainages of the Moberly and Murray Rivers and part of the Parsnip and the upper Wapiti Rivers; includes the Quintette herd, most of the Graham herd and part of the Kennedy and Moberly herds.

Fisher's 1918 report provides some idea of early Caribou populations in the Hart Foothills. During the late winter of 1918, a zoological expedition began to collect in British Columbia, arriving from Alberta via the Wapiti River and intending to leave the same way. Provincial Game Warden Bryan Williams felt some concern about this expedition and sent Deputy Game Warden George Fisher to accompany the group. They explored and collected on the upper Wapiti River where they saw large numbers of Moose (*Alces alces*), Caribou and wolves throughout February, March and April, 1918. The Caribou were in bands on the open ridges above 1900m and, although Fisher did not provide a total count for the area, one group of 78 was counted while other bands ranged from 14 to 65. Because some geographical names Fisher used have changed, it is difficult to place the exact location of his sightings but, according to his sketch map, the Caribou were between Red Deer Creek and the upper Wapiti. He felt that wolves were a greater threat to Moose than to Caribou.

2. Peace Lowland

Cheadle (1971) met a stranger in Fort St. John on 8 Nov 1863 who reported that a few miles below Fort St. John Caribou tracks were like a "sheep walk". It is difficult to know how much credibility to attach to this report.

3. The author has combined five ecosections in the northern Sub-boreal Interior as there are few observations for any single unit: Eastern Skeena Mountains, Southern Skeena Mountains, Manson Plateau, Babine Uplands and South Omineca Mountains; includes today's Takla and Wolverine herds, and part of the Chase and Omineca herds.

Historically, Caribou were present throughout much of the Sub-boreal Interior in the 19th century and at least the first two decades of the 20th century. When Daniel Harmon explored the country west of Stuart Lake in the winter of 1812,

Table 7. Historical observations of Northern Caribou in the Hart Foothills (5), Hart Ranges (4), Peace Lowland (2), Kiskatinaw Plateau (5)*.

Date	Location	Reference	Comments
Fall 1865	Moberly Lk	Moberly and Cameron 1929	Plentiful; 4 Caribou killed during first winter at Moberly Lake
Late 1890s	Hd Wapiti R	Cowan n.d.	Hunted Caribou; saw herd of 25
About 1908	Upper Moberly Lk	Preble 1910	50 Caribou killed in mtns nr head Moberly Lk
Summer 1913	Smokey R to Murray R	Fay 1914	Biological survey from the upper Smokey R to the Murray R, Caribou "plentiful"
March 1917	S. Pine R (Murray)	Parsons 1917	A report of 35 Caribou killed near S. Pine R
Spring 1918	Upper Wapiti R	Fisher 1918	Numerous
Summer 1920	Upper Pine R	Barrow 1919	"some Caribou" on upper reaches
Fall 1923	Upper Sukunka, Wapiti and Murray	Holzworth 1923	Scattered Caribou seen on headwaters of these 3 rivers in August, September and October
Spring 1924	Moberly lake	Pollen 1924	"very plentiful" west of Moberly Lake
Summer 1938	Mt Bickford and Tuscoola Mtn	Cowan 1939	Small numbers reported
Summer 1938	Peavine lake	Cowan 1939	Small group
March 1966 and Jan 1969	Upper Kiskatinaw R and Redwillow R	Stev/Hatler 1985[1]	Six Caribou on Kiskatinaw in 1966 and eight seen in Redwillow R area in 1969
April 1974	Bullmoose Mtn to Quintette Mtn	"	57 Caribou counted
Sept 1977	Wapiti/Onion Lks	"	13 Caribou counted
March 1981	Mt Bickford	"	115 Caribou counted

* numbers in brackets refer to number of observations

[1] References to Stevenson and Hatler 1985 are abbreviated in all tables.

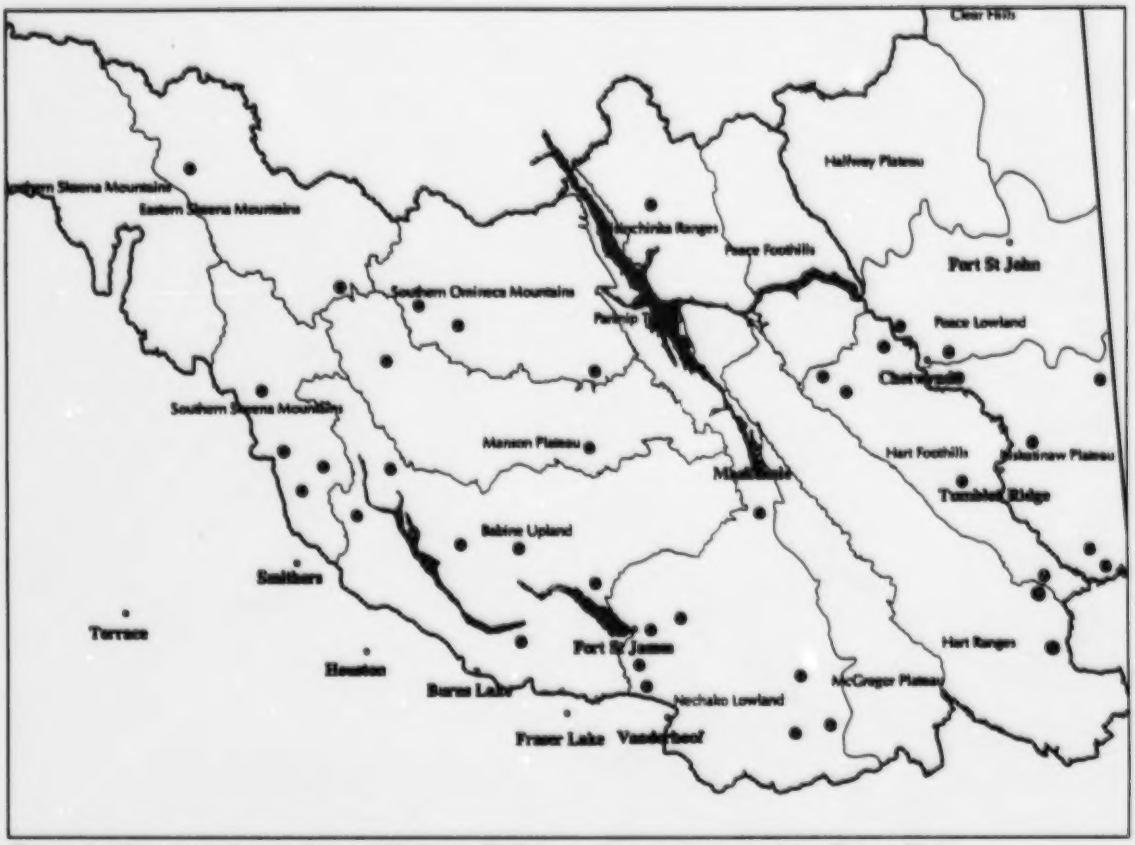


Figure 3. Historical observations of Northern Caribou in the ecosections of the Boreal Plains and the Sub-boreal Interior Ecoprovinces (Demarchi 1995).

he described the country they walked through – and where they saw Caribou – as "generally level . . . few mountains . . . a heavy growth of timber evinces." Taylor's observations (1912–13) during his Groundhog surveys may be misleading as he did not clearly locate his sightings. The author believes the majority of the Caribou he referred to were in the southern part of the Spatsizi; however, as he refers to Caribou in "most parts," it is assumed that some of the Caribou were in the Groundhog Mountains and in the valleys of the upper Skeena and the Sustut Rivers.

Stanwell-Fletcher and Stanwell-Fletcher (1943) saw 13 Caribou in August 1939 in the mountains on the headwaters of the Omineca River. On a second trip to the same area in the summer of 1941, they saw fresh tracks but no Caribou. He concluded that Caribou "formerly very common on mountain ranges adjoining the Driftwood Valley, now rather rare"; and Caribou were "previously seen in the hundreds". Although he gave no date for a decline, he felt that either a major migration had occurred and most Caribou had left the area or, for some undetermined reason, there had been a significant reduction in the population.

4. Nechako Lowland

Prince George to Fort St. James and northeast to McLeod River; no Caribou today.

Caribou were present but scarce in these lowlands in the early 1800s, especially around Fort St. James. There may have been an increase by the early 1900s but the record is sparse. It is not clear when Caribou ceased using the Nechako Lowlands.

Table 8. Historical Caribou observations in the Eastern Skeena Mtns (2), Southern Skeena Mtns (5), Manson Plateau (2), Babine Uplands (6) and Southern Omineca Mtns (4) *.

Date	Location	Reference	Comments
Early	Vic Hazelton	Martin 1993	Indians reported Caribou in mtns east of Hazelton
Early	Babine Range	Sumanik and Harper 1973	"old Caribou range" on ridge between Hazelton and Babine Lake (Hazelton Map Sheet)
May 1806	Bear Lake	Lamb 1960	Indians told Simon Fraser that Caribou found there
Jan 7, 1812	Vic Tachie R	Harmon 1820	"Tachy" Indians sometimes killed a Caribou
Jan 30, 1812	Lowlands west Stuart Lk	Harmon 1820	On a trip of several days "saw no large animals, excepting the Caribou"
1860s	Takla Lk	Rothrock 1872	Caribou seen on 'Mt. Cheops'; bought Caribou meat at Bulkley House from Indians
1872	Mansen Ck	Walkem 1914	Plenty of game, incl Caribou, in surrounding country
Summer 1879	Upper Babine	Gordon 1880	"might be found" in mtns btwn Skeena R and Babine L
Jun 15, 1887	Vic Babine L	Turner-Turner 1888	"All around Babine is a great country for Caribou"
About 1900	Bulkley Valley	Martin 1993	Large numbers Caribou moved from Telkwa Mtns in the winter, across Bulkley R and into Babine area
Summer 1912	Omineca R	Harvey 1912	Caribou present but not numerous
Summer 1912	Fraser, Stuart, Tremblay Lks	Butterfield 1912	Caribou present but not abundant
Summer 1913	Nation Lks	Milligan 1913	"known to herd on the higher plateau...last spring 17 Caribou shot in one 'yard' by Indian hunters"
Summer 1913	Babine Lk vic	Cross 1913	"a few Caribou" in mtns around Babine and Takla Lks
Summers 1912, '13	Groundhog Mtns	Taylor, T. 1913	"Caribou plentiful in most parts"
July 1921	9-Mile Mtn	Swarth 1921	A few Caribou; old antlers and tracks (Strong 1921)
Summer 1939	Hdwtrs Omineca R	Stanwell-Fletcher 1943	Small bands of Caribou seen; fresh tracks in summer 1941; Indians said Caribou wintered in timber
Early 1940s	Omineca R vic	Munro 1947	Herd on plateau between Omineca and Nation Rs
mid-1980s	Babine Mtns	Stev/Hatler 1985	"sporadic sightings" of Caribou

* numbers in brackets refer to number of observations

4.1.3 Coast and Mountains Ecoprovince (Figure 4)

1. Nass Ranges
Mountains on either side of the Skeena River between Terrace and Hazelton; includes part of the Telkwa herd.

Historically, Caribou were both more widespread and more numerous in the Nass Ranges than today, but when numbers declined is unclear. The old antlers found by this author in 1971 (see Table 10) were less than 50 years old, so Caribou were fairly plentiful in at least part of the Hazelton Mountains as late as the 1930s and 1940s. Although not in the Nass Ranges but the Nass Lowland, Preble (1910) reported Caribou in the vicinity of telegraph line cabins 4, 5 and 6 (the middle and upper Kispiox River) in 1910.

2. Kitimat Ranges
A large ecoregion extending from east of the lower Skeena River south to Bella Coola; includes a small part of today's Tweedsmuir herd.

It seems likely that Caribou were present up until about the 1920s, perhaps infrequently or irregularly, throughout most – or all – of the mountains of the Kitimat Ranges, sometimes wintering in the adjoining lowlands. A few summering Caribou may still be found in these mountains, especially in the south.

4.1.4 Central Interior Ecoprovince (Figure 5)

1. Bulkley Ranges
Mountains south of Smithers and Telkwa and includes the Telkwa River drainage; today's Telkwa herd.

The limited evidence suggests that Caribou were numerous in the Bulkley Ranges before the turn of the century; at that time, the Telkwa Caribou

Table 9. Historical observations of Caribou in the Nechako Lowlands.

Date	Location	Reference	Comments
Early	Pr George vic	Stev/Hatler 1985	Caribou crossed Fraser River at site of Hwy 97 bridge; wintered west of river
Early	Summit Lk	"	"formerly known" from west of the lake
June 5, 1793	Pack River	Lamb 1970	Alex. Mackenzie saw Caribou tracks
July 5, 1806	Nr Nechako R	Lamb 1960	Tracks on banks of Fraser R
Aug 1, 1806	Vic Ft St James	Lamb 1960	Simon Fraser reported: "There are no large animals except Carruban [Caribou]....when the Indians return they will go to the mountains to kill Carribou"
Apr 25, 1815	Fort St James	Morice 1978	Caribou present in the area, but scarce
Sep 15, 1828	McLeod Lake	McLeod 1872	Tracks of two Caribou near lake
Jan 11, 1829	Fort St James	Anon n.d. a	Caribou meat brought to the fort
March 8 and 29, 1832	Ft St James	Anon n.d. b	The end of a very severe winter and the writer reported that two Indians had killed two "Rein Deer"
Feb 12, 1842	Carrier Lake	Anon n.d. c	Indians shot 3 "carriboux" beyond Carrier Lake
Nov 6, 1865	Fort Fraser to Stuart Lake	Pope 1865	"there are also a few Cariboo, or Reindeer, but very scarce"
Feb 1, 1915	Stuart/Fraser Lk	Burrington 1915	"Caribou fairly plentiful" between the lakes

Table 10. Historical observations of Caribou in the Nass Ranges.

Date	Location	Reference	Comments
Early	Vic Hazelton	Martin 1993	Indians reported Caribou in mtns. west of Hazelton
Winter 1886/87	Vic Hazelton	Turner-Turner 1888	Hunted Caribou from Hazelton; said that every mountain within a 100-mile-radius of Hazelton had Caribou
1892	Moricetown	Poudrier 1892	Caribou "plentiful" in mountains near Moricetown
1913	Vic Hazelton	Preble 1913	Used to inhabit Rocher Déboulé Range; presently on hdwtrs Kleanza Ck and west of Kitwanga Lk
1913	Nass valley	Taylor, K. 1913	Caribou "in the foothills and on the mountain sides"
Summer 1971	Kiteen River	Spalding n.d.	Picked up 13 very old Caribou antlers; saw one old track
1998	Nass Range	Schultze 1999	Reported in mtns north of Terrace

Table 11. Historical observations of Caribou in the Kitimat Ranges.

Date	Location	Reference	Comments
1896	Kitimat Valley	Corrigan 1896	Indians reported Caribou sometimes found
Oct 18, 1897	Kitimat Valley	Wilkinson 1897	"Caribou frequent the valley in winter"
1901	Lakelse Lake	Gray 1903	"traces of Caribou or mountain goat" north of lake
1912	Vic lower Skeena R	Boam 1912	Caribou "wander west almost down to the waters of the Pacific"
1913	Lakelse Lake	Cross 1913	"a few Caribou are seen...near Lakelse Lake"
August 1913	Lakelse Valley	Cokely 1913	a few Caribou found on higher mountains
1916	Dean River	Williams 1916b	Caribou reported within a mile or two from head of Dean Channel
May 1917	Bella Coola V	Williams 1917a	Indians hunting Caribou in the valley
July 1920	Core Mtn	Swannell, n.d.	Caribou in view on snow; shot 2 (Chikamon Range)
June 1921	Kitlope Lake	Swannell n.d.	Tracks of 2 Caribou, prob vicinity of Mt Blane
1922	Lakelse Lake	Monckton 1922	Caribou rare but had been seen
1999	Bella Coola V	Youds 1999	Some Caribou still summer north of Bella Coola Valley

Table 12. Historical observations of Caribou in the Bulkley Ranges.

Date	Location	Reference	Comments
About 1880	Telkwa Mtns	Munro 1947	Large #'s Caribou used to leave the Telkwa mtns and cross the Bulkley R. at Telkwa. An elderly Indian recalled seeing a herd of 150 animals
July 1, 1910	Telkwa Basin	Lewis 1910	"a stray Caribou" may be seen
Summer 1913	Telkwa Mtns	Preble 1913	In mountains along Morice and Telkwa Rivers
1913	Hudson Bay Mtn	Preble 1913	40–50 Caribou on the mountain
1943	Telkwa Mtns	Munro 1947	About 250 animals; increase during last 15 years
1949	Telkwa Mtns	Stev/Hatler 1985	"probably not more than 100" Caribou
1969	Telkwa Mtns	"	271 animals counted
1980s	"	"	Stable (?)

probably ranged northwest at least to the mountains behind Moricetown. Sometime around the turn of the century, there was a decline, followed by an increase in the early 1940s, another decline, then an increase by the mid-1960s. Over-hunting was often been blamed for the observed population declines.

2. Bulkley Basin

The area from Vanderhoof to Houston and south to Ootsa Lake; no known Caribou today.

Caribou have used the Bulkley Basin throughout the period of this review, with more animals in the early days than recently. They were important to the native Indians, not only for food and clothing: George Dawson (Cole and Lockner 1989) determined that the Stoney Indians called the star constellation Pleides "sum-ni-tan-li", their expression for Caribou.

3. Nechako Upland

Upper Morice River, Whitesail and Eutsuk Lakes; includes most of the Tweedsmuir herd.

Before the arrival of the first settlers, Caribou were abundant in the mountains of the Nechako Upland, moving seasonally into the associated lowlands (see Table 14). The Indians relied heavily upon Caribou: Swannell (n.d.) discussed an old hunting trail on 'Stoney Mountain" [Wells Mountain] used by the Indians when they brought down Caribou; and the Indians told Cyril Shelford how they snared Caribou on game trails located on land then occupied by the Shelford farm. There was a decline in the 1920s, particularly by the end of that decade, continuing through the 1930s. The population then increased to the mid-1950s, then declined again until the 1970s, then experienced some recovery (Hatter 1979).

4. Western Chilcotin Upland

The upper Chilcotin River drainage west to Anahim Lake and the upper Dean River; the Itcha-Ilgachuz herd.

Historically, Caribou were plentiful in the Western Chilcotin Uplands and were important to native

Table 13. Historical observations of Caribou in the Bulkley Basin.

Date	Location	Reference	Comments
About 1862	Fraser Lake	Moberly/Cameron 1929	"The country abounded in Caribou"
Sept 6, 1878	Francois Lake	Cole and Lockner 1989	Caribou "abound about the head and north side of Francois Lake"
Mar 29, 1909	Vic Telkwa	Williams, A.E. 1909	Complained of Indians killing Caribou
1909	Vanderhoof vic	Nicholson 1989	Recalled Caribou when first in district
Early 1900s	Francois Lake	Munro 1947	Caribou wintered in vicinity
Summer 1912	Ootsa/Francois Lk	Schelderup 1912	Encountered Caribou occasionally
Apr 24, 1918	Fort Fraser	Dahl 1918	Complained of Indians killing Caribou
1919	Fraser Lk vic	Ray 1990	Caribou more numerous in 1919 than 1990
Summer 1920	Lakes District	Schelderup 1920	Found the "occasional" Caribou
1920	Bulkley Valley	Baker 1921	Caribou bands in "good condition"
1946–1970s	Fraser Lk vic	Ray 1990	Wintered Lily Lk in 1946, Bearhead Hills in 1947; 70 at Rognaas Lk in 1970s

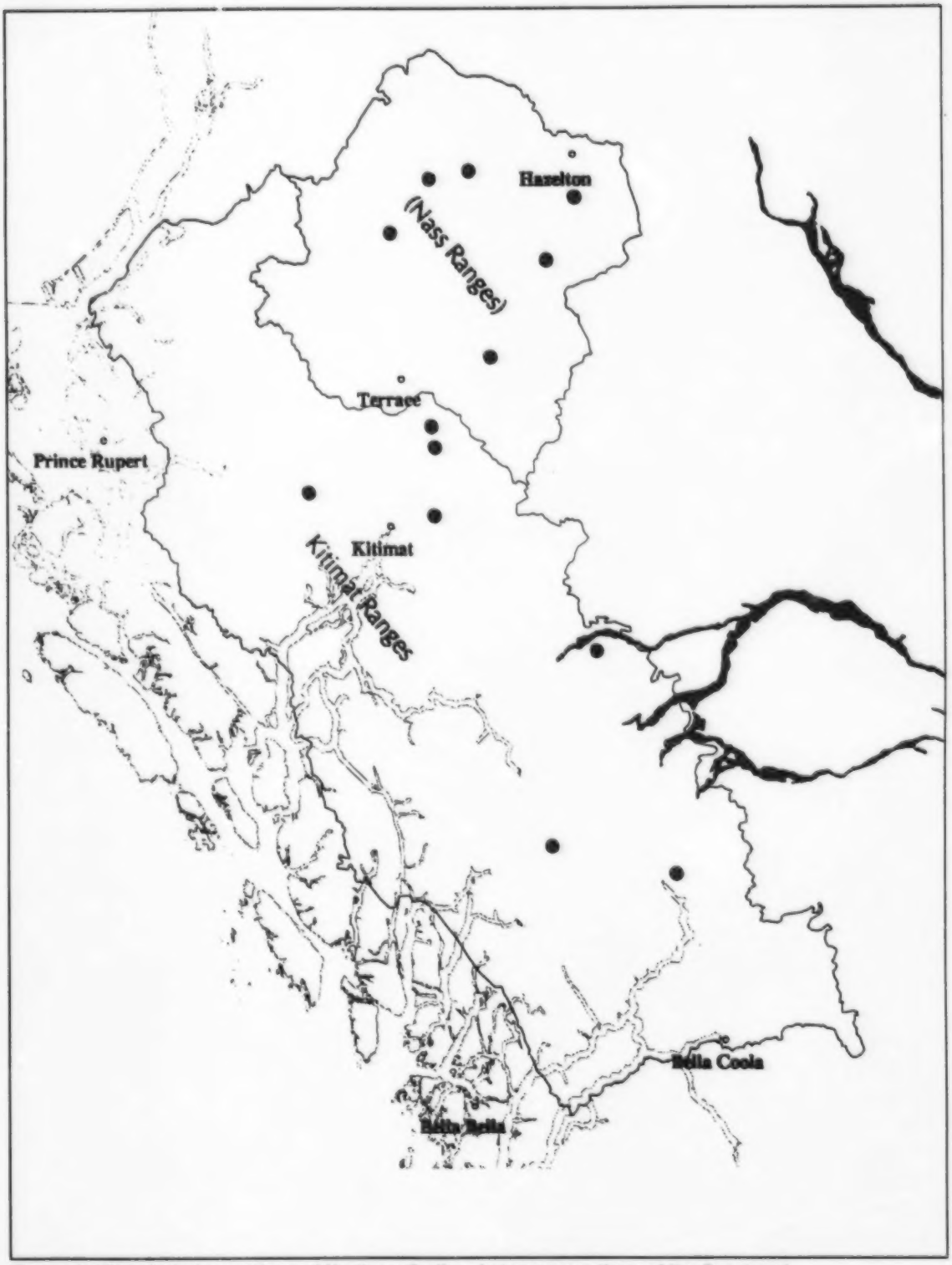


Figure 4. Historical observations of Northern Caribou in two ecosections of the Coast and Mountains Ecoprovince (Demarchi 1995).

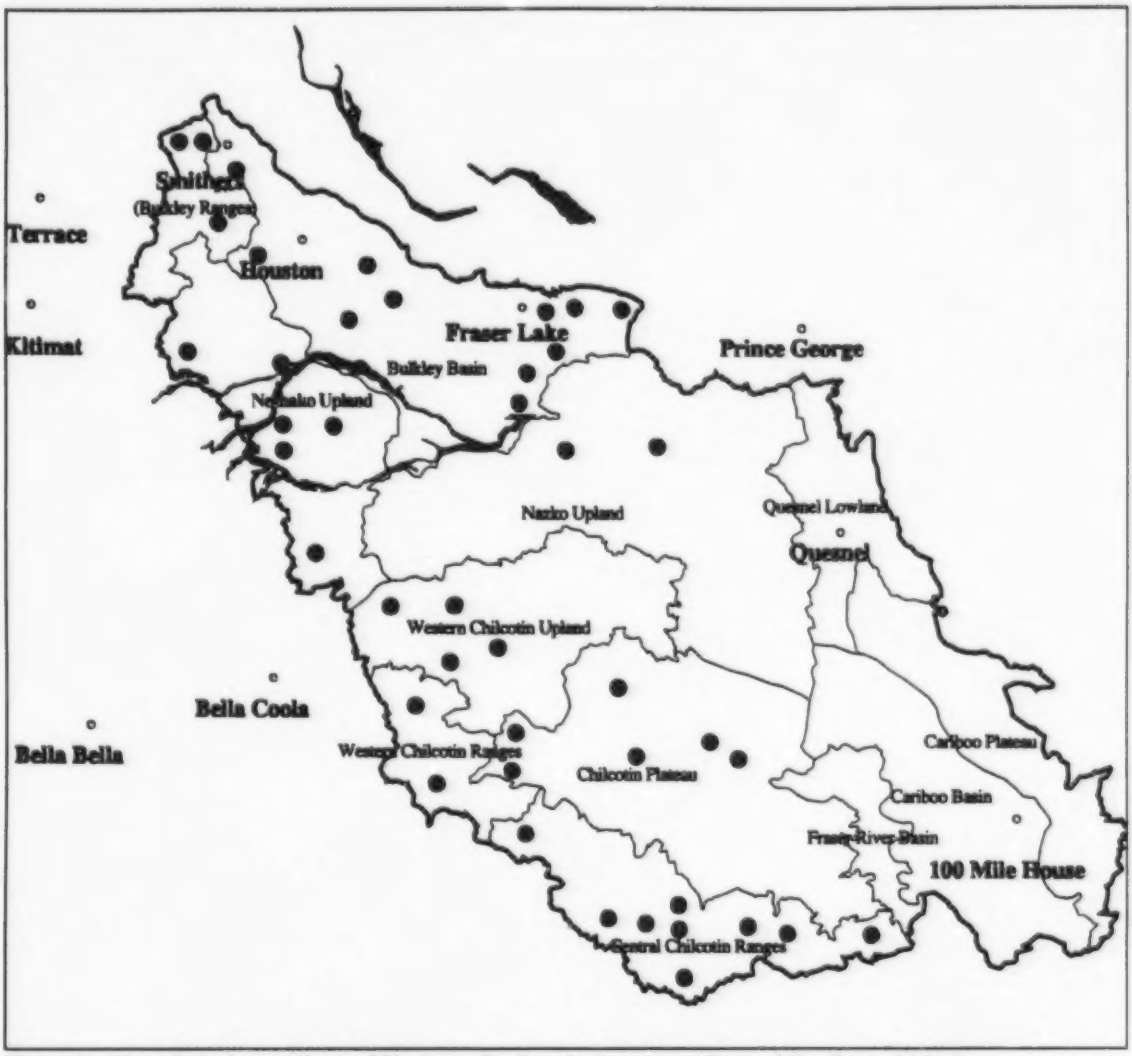


Figure 5. Historical observations of Northern Caribou in the ecosections of the Central Interior Ecoprovince (Demarchi 1995).

Indians for food, clothing and implements. A decline probably began as early as 1908 or 1909; this continued until 1914 or 1915 when all concerned, Indians and non-Indians, recognized there were far fewer Caribou than earlier and many wanted a hunting closure for at least some of the area; this was enacted in 1916. There were still huntable populations, however, and that prompted the 1919 comment of "good Caribou country" in the Itcha Mountains. The writer was applying for a guide's licence and did not say that Caribou were plentiful but felt that he could take hunters there for a hunt. It is likely the population began to show some increase in the 1940s but was still low in 1956. Caribou numbers have increased over the past 40 years and the population is now stable at an estimated 1700 animals. As Stevenson and Hatler (1985) have noted, this is one of the few instances where a Caribou population has shown a remarkable *growth* within historical times.

5. Chilcotin Plateau, Western Chilcotin Ranges, Central Chilcotin Ranges and Nazko Uplands

These include the south-western drainage of the

Table 14. Historical observations of Caribou in the Nechako Upland.

Date	Location	Reference	Comment
Early	Ootsa Lk vic	Shelford 1988	Indians said Caribou plentiful
Summer 1910	Mtns south Ootsa Lk	Shelford 1988	Large numbers of Caribou
Summer 1914	Eutsuk/Whitesail Lks, etc	Rolston 1914	Caribou plentiful ; also on Tahtsa Lk
Summer 1914	Plateau s of Ootsa Lk	Rolston 1914	"splendid hunting ground"
Summer 1919	Vic Eutsuk, Ootsa Lk	Swannell n.d.	Caribou fairly plentiful in mtns.
1925	Nanika Lake	Vincent 1925	Caribou seen [article in Swannell papers]
Summer 1926	Dean R to Eutsuk Lk	Swannell 1926	Caribou scarce
1928	Mtns s of Ootsa Lk and on Dean R	Spiller 1928	last of the Chilcotin Caribou; blamed wolves
1929	Whitesail/Tetachuk Lks	Van Dyk 1929	Caribou practically extinct; blamed Indians
1930	Ecosection (and others)	Hunting Regs	Season closed, s. CNR line and w. Fraser R
Early 1940s	Ootsa Lk, Tweedsmuir Pk	Munro 1947	Guide est popl'n about 300; wolf predation
1955	Tweedsmuir Park	Hatter 1979	Increase in mid-1940s to abt 1000 in 1955

Chilcotin River and much of the West Road River; today's Charlotte Lake herd and part of the Tweedsmuir herd.

McDougall (1822) found Caribou important for the well-being of the Chilcotin Indians: "they are certainly a fine brave looking set of Indians, whose lands are far from being poor either, as to beaver (*Castor canadensis*) or Large Animals...[they are] warmly clad with good Chevreux, Elk (*Cervus elaphus*) as well as Carriboux skins as blankets..." (McDougall 1822). These Caribou may have been killed in the Itcha or Ilgachuz mountains but McDougal's observations suggest there were Caribou near the village at certain times.

Table 15. Historical observations of Caribou in the Western Chilcotin Uplands.

Date	Location	Reference	Comments
Early	Anahim Lk	Stewart 1978	Most important meat for Anahim Indians
July 17, 1793	Mackenzie Pass	Lamb 1970	Alex. Mackenzie shot one; fired at large herd
1820s	Upper Chilcotin	Cox 1831	"rein-deer...in great numbers" in mountains
1827	Chilcotin	MacGillivray n.d.	Caribou numerous
1870s	Upper Chilcotin	Anon 1877	"Reindeer" numerous on plateau at hd Chilcotin R
July 15, 1876	Nr Young Ck	Cole/Lockner 1989	G. Dawson found "abundant" tracks abt 4,000'
1882	Chilcotin R	Anderson 1882	"especially abound" on plateau on river hdwtrs
Summer 1890	Chilcotin	Poudrier 1890	Plentiful in Itcha, Il-ga-chuz and Tsi-stult Mtns
1906	N Chilcotin	Williams 1906a	Good reports of Caribou
Oct 1, 1908	Itcha Mtn vic	Young 1908	"considerable numbers of Caribou left"; many had taken to the timber
1909	Itcha Mtns	Williams 1909a	"Caribou seem to have disappeared"
1911	Hd Bella Coola River	Williams 1911a	Caribou "had practically disappeared [but]...now said to be coming back"
1915	Chilcotin	Williams 1915	"almost disappeared"; hunting closure requested
Aug 20, 1915	Chilcotin	Fougner 1915	Threatened with extinction, esp in Rainbow and Itcha Mountains
1916	Rainbow and Itcha Mtns	1916 hunting regs	Season closed for 5 years
Jun 30, 1919	Ilgachuz Mtns	Tucker 1919	Caribou becoming scarce
Dec 2, 1919	Itcha Mtns	Moore 1919	"good Caribou country"
Summer 1926	Rainbow Mtns	Swannell 1926	Caribou very scarce
1929 to 1931	Rainbow Mtns	Bergerud 1978	Tommy Walker said no Caribou during summer
1935	Chilcotin	Hobson 1951	Caribou important game animal until about 1914; only a few left on the Ilgachuz and Itcha Mtns
1936	Chilcotin	Racey 1936	Caribou formerly numerous, now almost gone
1940	Itcha Mtns	Robertson 1940	Caribou increasing
Summer 1956	Rainbow Mtns	Ritcey 1956	Estimated 100–150 Caribou
1982	Rainbow, Itcha, Ilgachuz Mtns	Stev/Hatler 1985	711 animals counted
1996	"	Heard and Vagt 1998	Herd estimated at 1700 animals

Table 16. Historical observations of Caribou in the Chilcotin Plateau (5), Western Chilcotin Ranges (4), Central Chilcotin Ranges (9) and Nazko Uplands (3)* ecosections.

Date	Location	Reference	Comments
Early	Upper Bridge R	Teit 1906	Caribou hunted toward Chilco Lake
Summer 1808	Chilcotin Plateau	Lamb 1960	From Simon Fraser: "[The Chilcotin River] runs through a fine country abounding with plenty of animals such as...Carriboux [and others]"
Jan 2, 1822	Chilcotin Lk	McDougall 1822	"appears that the Carriboux are the most numerous [of large animals] at certain times"
1878	Upper Chilcotin R	Cole and Lockner 1989	"Caribou very abundant...in the whole country west of the Quesnel and Blackwater trail"
Late 1800s	Chilko Lake vic	Martin 1993	A.W. Phair guided hunters for Caribou
Feb 22, 1896	W of Tatla Lk	Bell 1896	Caribou hunted on mtn 20 miles west Tatla Lake
May 31, 1906	Hdwtrs Chilanco R	Williams S 1906	"a great Caribou ground in winter"
July 17, 1907	Taseko River	MacDonald 1907	Caribou on "White River"
1908	W of Tatla Lk	Anon 1908	Caribou in mtns west of Tatla Lake
Jun 17, 1909	Hanceville vic	Pyper 1909	Caribou reported
Summer 1910	Hdwtrs Big Ck	Galloway 1917	Saw Caribou tracks
Summer 1912	Upper Chilako	McElhanney 1912	Had seen "a few Caribou"
Summer 1913	Upper Atnarko	Meyerstein 1913	Caribou numerous in mtns south of Charlotte Lake and in Atnarko country
May 15, 1917	Upr Bella Coola v	Williams 1917a	Complained of Indians on horses killing Caribou
Dec 2, 1919	Tatlayoko and upper Chilko Lakes	Moore 1919	Good Caribou country
Summer 1952	Camelsfoot Range	Hatter 1995	Caribou antler found summer 1952
1955–56	Mt. Tatlow vic	Martin 1993	Lawson Sugden picked up small Caribou antler
1967	Upper Chilako	Stev/Hatler 1985	Caribou between Fraser R and Williston Dam
mid-1980s ?	Shulaps Range	Low 1999	Caribou antler found
Late 1980s	Hd Relay Creek	Kitcey n.d.	Old Caribou antler found
1989–1996	Nemaiah V vic	Young 1999	Old antlers found; also on RCAF Pk and Dash Ck

* numbers in brackets refer to number of observations

James Teit's 1906 observations of Caribou on the upper Bridge River referred to the north-west part of the Lillooet Indian's hunting grounds, extending nearly to Chilco Lake. Historically, Caribou were well known throughout these mountains, as European hunting parties went in from both Lillooet and Tatla Lake before the turn of the century. When Caribou abandoned the mountains of the upper Bridge, Taseko and Chilko rivers and upper Big Creek is not clear from the historical record. The antlers found from the 1950s to the 1990s were probably less than 50 years old, and it is likely that Caribou used these ranges until the 1930s, at least; perhaps a stray Caribou may still be occasionally found.

4.2 Mountain Caribou

4.2.1 Southern Interior Ecoprovince (Figure 6)

1. Northern Thompson Upland and Southern Thompson Upland

These two ecosections cover the plateau west of Okanagan Lake and extend north to the Thompson River and to Mahood Lake; no Caribou today.

Caribou inhabited the country north of Kamloops in historical times, and when they disappeared is unclear. The observations of Caribou west of Peachland indicate these ranges were used historically but to what extent is unclear. The two Caribou that appeared at Missezula Lake near Princeton in 1914 are of incidental interest only; they did not remain.

2. Northern Okanagan Highland

The mountains east of Okanagan Lake from the lower end of Mabel Lake to near the 49th parallel and includes the Kettle River; no Caribou today.

Caribou were present throughout the Northern Okanagan Highland in early historical times (see Table 18) and in some locations ranged south nearly to the 49th parallel. They were an impor-

Table 17. Historical observations of Caribou in the Northern Thompson Upland (5) and the Southern Thompson Upland (2) *.

Date	Location	Reference	Comments
Early	Kamloops vic	Fernie 1926	Caribou "wantonly slaughtered" near Kamloops
Early	Porcupine Ridge	Ritcey 1999	Unsubstantiated reports of Caribou in old days
Early	W of Peachland	Anon n.d. (d)	Scattered references to Caribou
1870s	Silwhorakun Mt	Stev/Hatler 1985	George Dawson found evidence of Caribou
1906	Savonna vic	Williams 1906b	Can reach Caribou country 50 mi from Savonna
Summer 1913	Bonaparte Lk	Drewry 1929	Caribou tracks in swamps north of lake
Summer 1914	Missezula Lk	Schisler 1914	Two Caribou appeared briefly

* numbers in brackets refer to number of observations

tant resource for the Indians before the white settlers arrived, supplying much of their clothing and some of their food (Brooks 1945). By the 1880s and 1890s, the area became known as a good place to hunt Caribou (and other game) and this continued into the early 20th century. During the years of Caribou abundance, Teddy Roosevelt, both an early conservationist and one of North America's best known big game hunters, hunted for Caribou on Greystoke Mountain (Wahl 1988). The population began to decline sometime early in the 20th century, but small scattered herds survived until the late 1950s or early 1960s.

4.2.2 Southern Interior Mountains Ecoprovince (Figure 7)

1. Border Ranges, McGillivray Range and Southern Columbia Mountains; mountains south of Cranbrook to the 49th parallell, and mountains between Trail, Nelson and Yahk; today's South Selkirk herd and part of South Purcell herd.

The historical record for the south Kootenays is sparse; two observations are included from northern Montana and northeastern Washington, providing a glimpse of early Caribou numbers and distribution immediately south of the 49th parallel. When the Upper Kootenay Indians hunted Caribou between Tobacco Plains and Yaak in early times, several bands met from as far north as present-day Invermere to hunt together (the several spellings of Yaak are the Kootenay Indians' word for 'Caribou'). Johnson (1969) specifically referred to "the upper Kutenai range" and this range extended north from the 49th parallel to about Big Bend, including both sides of the upper Columbia and Kootenay Rivers; a large area and the author does not believe Caribou

Table 18. Historical observations of Caribou on the Northern Okanagan Highland.

Date	Location	Reference	Comments
Early	E of Okan Lk	Brooks 1945	Common at high elev.; "could be killed in numbers ...when the Indians overtook them on snowshoes"
Late 1800s	Kettle R	Wahl 1988	Caribou "fairly plentiful" in higher ranges
Late 1800s	Chute Lake	Wahl 1988	Once known as 'Caribou flats'
Sep 6, 1878	E of Okan Lk	Cole/Lockner 1989	Caribou ranged to 49th parallel near the lake in winter
Oct 17, 1891	Harris Ck vic	Wahl 1988	Best Caribou range from Harris Ck to Greyback Mtn
Jan 9, 1894	Harris Ck	Latimer 1929	A Caribou hunter's pack-trail up valley to Kettle R
Oct 17, 1895	Harris Ck	Wahl 1988	One hunting party took 7 Caribou
Late 1890s	Mission Ck	Cowan n.d.	Caribou in mtns at headwaters of Mission Ck; Cowan killed 3 Caribou on White Mtn in 1898
1905	Okanagan	Williams 1905a	Caribou "rapidly disappearing"
Early 1900s	Harris Ck vic	Munro 1947	Caribou disappeared sometime in early 1900s
Summer 1913	Kettle R	Shaw 1913	Saw "as many as 150 Caribou in one band" in mountains of Kettle and West Kettle Rs
March 1913	Carmi area	Crawford 1913	"a bunch of Caribou" in mtns abt 14 mi from Carmi
Jan 13, 1914	aseux Lk vic	Blurton 1914	Caribou sometimes on higher ranges east Vaseux L
Oct 1, 1915	Beaverdell	Blackmore 1915	Small band of Caribou had been seen near Beaverdell
Jul 24, 1917	Kettle R	Williams 1917b	"might get into Caribou country at head of river"
1929	Upr Kettle R	Sulivan 1929	Not seen for several years; once in "fair numbers"
1954	Upr Kettle R	Stev/Hatler 1985	C/O Alan Frisby saw 3 Caribou near road
1956	Joe Rich Ck	Lane 1956	Small herd east of Kelowna in Joe Rich Ck

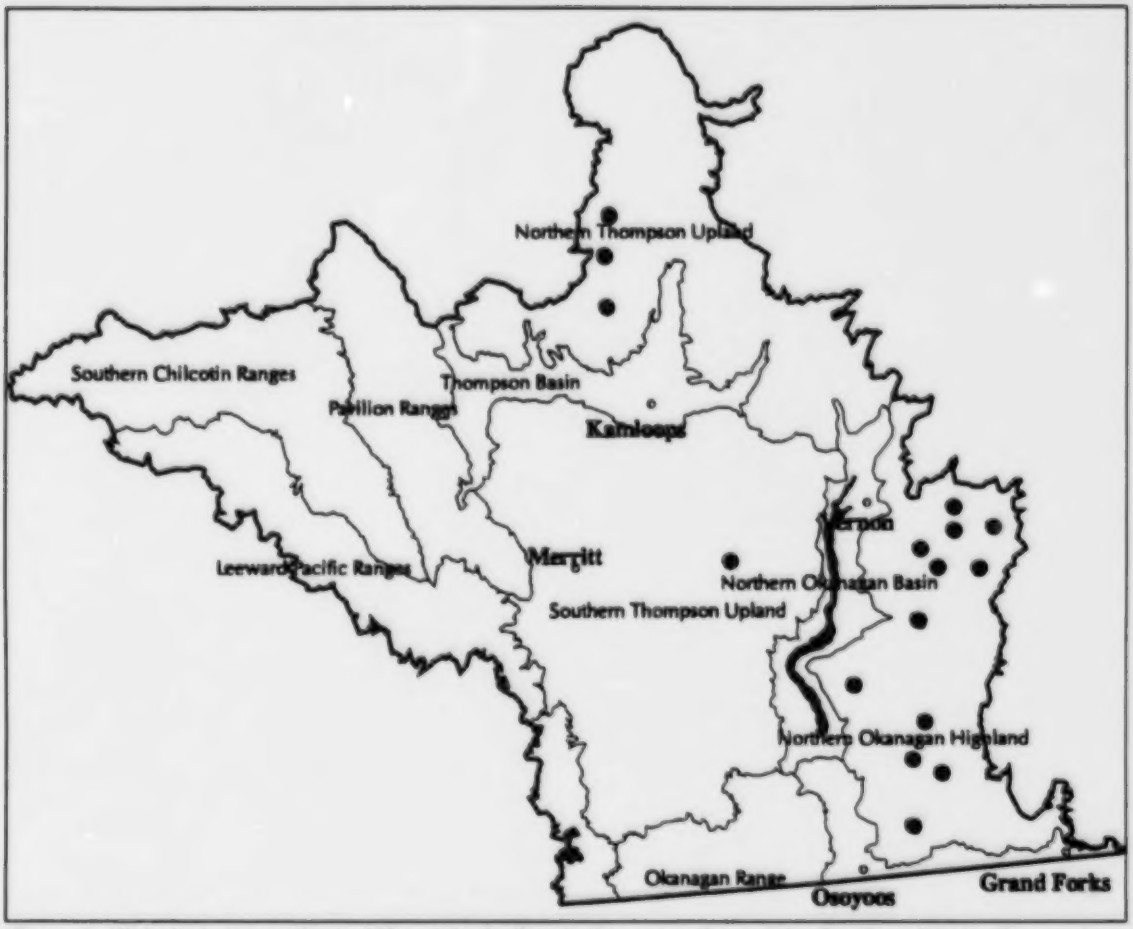


Figure 6. Historical observations of Mountain Caribou in the ecosections of the Southern Interior Ecoprovince (Demarchi 1995).

were "thick" everywhere. The historical record is not precise in describing a decline in Caribou numbers, although this may have happened in the southern Kootenys as early as the late 1800s or very early 1900s.

2. Eastern Purcell Mountains

The Purcells west of the Columbia River north to Donald; part of South Purcell and Central Selkirk herds.

Small bands of Caribou have ranged from Toby Creek north to the Dogtooth Mountains throughout historical times; there is no evidence they were ever abundant.

3. Selkirk Foothills

The mountains west of the Lower Arrow Lake to the drainage of the Granby River; no Caribou today.

There is no evidence that Caribou were numerous in the Selkirk Foothills, at least in historical times. Caribou seen during the 1891 trip from Monashee Mines (location unknown) to the Lower Arrow Lake may have been near today's Monashee Park or they may have been closer to the Lower Arrow Lake. Caribou had largely disappeared in this ecosection by the 1930s.

4. Central Columbia Mountains

From the Monashee Mountains to the western Purcells; the Monashee herd and part of the South Purcells herd. References to Caribou near Sugar Lake and today's Monashee Park have been

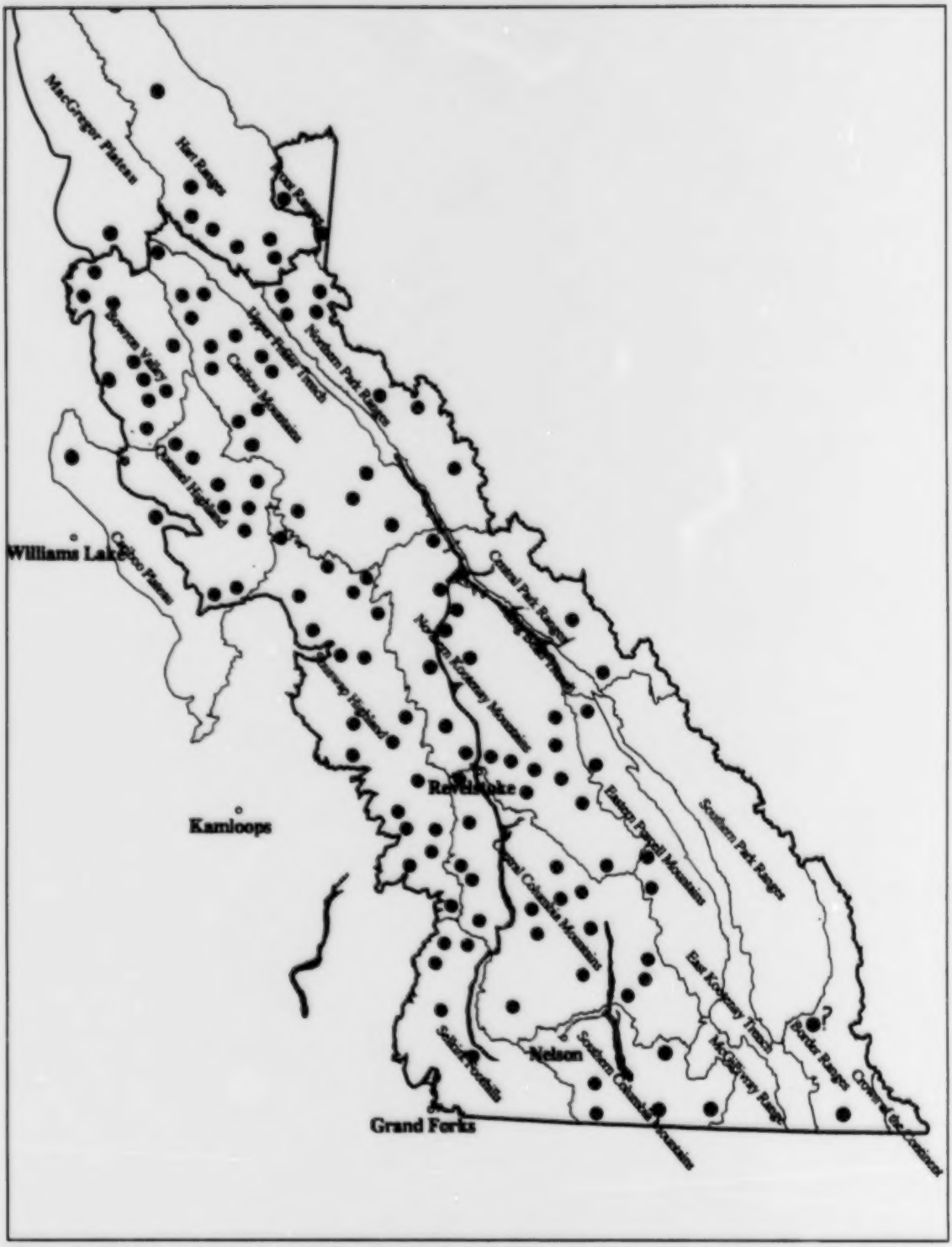


Figure 7. Historical observations of Mountain Caribou in the ecosections of the Southern Interior Mountain Ecoprovince, plus the Cariboo Plateau and MacGregor Plateau, Hart Ranges, and Front Ranges ecosections of the Sub-Boreal Interior Ecoprovince (Demarchi 1995).

Table 19. Historical observations of Caribou in the south Kootenays.

Date	Location	Reference	Comments
Early	N Montana	Layser 1974	Caribou hunted between Tobacco Plains and Yaak
1920s	Salmo Mtn	Layser 1974	Caribou (on Salmo R., northeast Washington)
Early	Upper Kutenai	Johnson 1969	"Caribou were thick in the old days"
1857	Galton Range	Lord 1866	Caribou on Galton Range
Sept 1859	Summit Lk and Summit Ck	Spry 1963	Abundant tracks; "frequent the country in large numbers"
Oct 1859	Moyie Lk	Spry 1963	Met a "party of Kootenays in search of...cariboeufs"
1800s	Creston Valley	Stev/Hatler 1985	Migrated across the valley "in great numbers" (may have been south of 49th parallel)
1913	Goat R area	Richardson 1913	A few Caribou at head Goat R, Perry Ck, and Moyie R
1914	Lizard Ck	Bedford 1914	Two Caribou killed by Indian hunters; location questionable but probably today's Lizard Ck or Lizard Range
Aug 1915	Upper Moyie	Ward 1915	"much Caribou sign" hdwtrs Moyie and Goat Rs
1927	Bayonne	Dunwoody 1927	A few Caribou in Bayonne country and Granite Ck
Aug 1929	S Col Mtns	Anderson 1929	Goat Ck "good place for Caribou"; 11 seen at Boundary L
1941	SE of Nelson	Sinclair 1941	Small band reported
1943	Selkirk Mtns	Sinclair 1943	Small numbers south through Selkirks to border

tabulated in the Central Columbia Mountains rather than the North Okanagan Highland, where they belong geographically.

David Douglas saw evidence of Caribou while on his April 1827 trip up the Arrow Lakes. His first observation, near the upper end of Lower Arrow Lake, may have been to mountains west of the lake but, based on the relative abundance of Caribou east of the lake, it is assumed he meant the latter. He wrote: "not fewer than a hundred skins [Caribou] were in this lodge. They are killed readily during the deep snow with the bow". While still on the Arrow Lakes but at the head of the Upper Arrow, he observed: "They seem to live comfortably, many skins of Black-tailed (*Odocoileus hemionus*), Rein and Red deer being in their possession" (Davies 1980). James Teit's report of Caribou in the Salishan Indians' hunting territory supports these observations of David Douglas.

The evidence suggests Caribou were widespread throughout this ecosection – and in some locations numerous – during the 1800s and at least into the first decade of the 20th century. In 1917 there were, apparently, enough Caribou to organize a very limited commercial harvest in the Lardeau area. Justification for this program was based on the unquestionable need of some families. However, Provincial Game Warden Bryan Williams, already under severe criticism from the newly-elected Liberal Government, did not condone the proposal but was directed to issue the permit by the Deputy Attorney General. There is no record of the success or failure of this commercial Caribou hunt.

Table 20. Historical observations of Caribou in the Eastern Purcell Mountains.

Date	Location	Reference	Comments
1907	Vicinity Toby Ck	Anon 1907	"Caribou increasing on Toby and Dutch divide, on Findley Ck summit and Igillamiche summit"
Dec 1907	Horsethief Ck	Taynton 1907	7 Caribou just north of Horsethief Ck
1912	Dogtooth Mtn	Wheeler/Parker 1912	Found in valleys; also "abound" in mtns east of Beaver Valley
Fall 1910	Spillimacheen R	Richardson n.d.	Hunted a band of 9 on headwaters; many tracks
1917	Spillimacheen R	Richardson n.d.	Saw a "good many Caribou" on headwaters
1920	East Purcells	Baker 1921	On hdwtrs Toby and Horsethief cks, and Spillamacheen R
1927	Toby Ck	Dunwoody 1927	A small band of Caribou

Table 21. Historical observations of Caribou in the Selkirk Foothills.

Date	Location	Reference	Comments
Oct 3, 1847	Lwr Arrow Lk	Kane 1859	Saw 3 Caribou
June 11, 1891	W of Arrow Lk	Wahl 1988	"numerous Caribou", Monashee Mine to lwr Arrow L
1891	Inonoaklin Ck	Coryell 1891	Caribou "abound" in Township 66
June 28, 1916	Grand Forks	Mader 1916	Recommended an open season in his District
1927	Christina Range	Dunwoody 1927	A few Caribou on headwaters of the Granby River
1928	Upper Granby	Dunwoody 1928	A few Caribou
Winter 1953	Inonoaklin Ck	Stev/Hatler v.2, 1985	A. Frisby saw tracks of 7 Caribou crossing Hwy 6

Table 22. Historical observations of Caribou in the Central Columbia Mountains.

Date	Location	Reference	Comments
Early	Arrow Lakes	Teit 1930	Below Nakusp "some fine Caribou grounds"; plentiful vicinity Arrow, Kootenay, Slocan and Caribou Lks
April 1827	Lwr Arrow Lk	Davies 1980	"Reindeer (Cariboux of the voyageurs) it would appear are found in abundance in the mountains"
Oct 1847	Upr Arrow L	Kane 1859	Oct 6th "saw some cariboos"; 8th, more Caribou seen nr Boat Encampment
1880s	Kootenay Lk	Baillie-Grohman 1900	"plentiful on steep slopes around Kootenay Lake"; by 1900, forest fires had reduced numbers
Oct 8, 1891	Vicinity Sugar Lk	Wahl 1988	Hunting party killed 4 bull Caribou
1894	Crawford Pk	McGregor 1894	Survey crew ate Caribou meat for several days
1906	Gray Creek	Oliver 1962	Caribou numbers low, blamed hunting by prospectors; numbers then increased (after 1918 hunting closure?)
Jun 10, 1906	Whatshan Lk	Blyth 1906	Caribou sign "abundant" on higher slopes
Nov 19, 1908	Crawford Ck	Williams 1908b	"quite a few Caribou" killed up Crawford Ck
1908	St Mary R.	Williams 1908a	An increase in Caribou numbers
Fall 1909	Sugar Lake	Venables 1909	Caribou at Sugar Lk
1911	Mt Begbie	Smythe 1911	"all kinds of Caribou" on Mt Begbie; also Greely Ck
Jul 29, 1912	Sugar Lk	Blurton 1912a	"small bands" of Caribou in the vicinity of Sugar Lake
1915	Selkirk Mtns	Williams 1915	More reported in Selkirk mtns than for many years
Sep 12, 1917	Lardeau	Elliot 1917	"very large herds of Caribou...I myself have counted over 100 in a single herd"; recommended sale of game
Oct 22, 1917	Lardeau	Williams 1917c	Resident of Trout Lk given a permit to kill 5 Caribou (in season); to sell the meat to needy families
1918	Kootenays	Hunting regs	Hunting season closed
Nov 28, 1918	New Denver area	Gunn 1918	A band of Caribou on summit between Kootenay Lk and Slocan Lk; one on summit between Slocan and Arrow Lks
Dec 2, 1918	Nakusp area	Pearman 1918	Caribou "plentiful"
1926	Kootenay and Slocan Lks	Dunwoody 1926	Increased numbers vicinity Wilson and Mill cks (Slocan); Kaslo ck and Howser district
1927	Several sites	Dunwoody 1927	Caribou on Crawford, Wilson, upper Pingston and Kuskanax cks "slowy increasing"
1927	St Mary R	Dunwoody 1927	Small band between hdwtrs Crawford ck and St Mary R
1928	Several sites	Dunwoody 1928	Dunwoody repeated his 1927 observations but said that all bands were remnants of much larger herds
1929	Crawford Ck	Williams 1929	Caribou scarce on hdwtrs Crawford ck
1935	W Kootenays	Kearns 1935	In mtns contiguous to Kootenay and Arrow Lks
1937	W Kootenays	Kearns 1937	Caribou "sparsely distributed" in mtn ranges contiguous to Kootenay and Arrow Lks
1944	Sugar Lk vicinity	Wahl 1988	An estimated 100 Caribou in Monashee herd
1945	Ecoregion	Kearns 1945	"well distributed" in Selkirk Mtns west to Arrow Lks
1976	"	Stev/Hatler 1985	Estimated 45 Caribou in Monashee herd

5. Northern Kootenay Mountains

The upper Purcell Mountains north to Big Bend; most of the Revelstoke herd, and part of the Central Selkirks and Central Rockies herds.

Caribou were widespread throughout this ecosection in the early days and often "plentiful" on the higher ranges; there is no evidence in these reports of a marked change during the late 1800s or the first two decades of this century. The 1924–1936 report of 500–1000 Caribou counted each October on the Prairie Hills (just north of Grizzly Creek and just outside the east boundary of Glacier National Park) does not entirely jibe with earlier (or later) observations. However, it was made by a Parks employee and cannot be ignored.

6. East Kootenay Trench

There is only one observation – one of use rather than distribution – of Caribou in the Trench. Walter Moberly (1866) told his Chief: "The Kootenay Indians... between Wild Horse Creek and Kinbasket's Crossing [dress in skins]...of the Caribou".

7. Central Park Ranges

The mountains east of the upper Kootenay River and north from Donald Station to the vicinity of Hugh Allan Creek; part of the Revelstoke herd. There are three Caribou observations from the Central Park Mountains: Moberly (1866) reported that Caribou were numerous in the mountains north of the Blaeberry River in the mid-1880s; Williams (1911b) proposed a Caribou hunt in the vicinity of Kinbasket Lake; and there may still be scattered Caribou in this ecosection as eight Caribou were reported near Blackwater Creek in 1973 (Stevenson and Hatler 1985).

8a. Shuswap Highland – south

The author has divided this ecosection into a southern component, south and east of the North Thompson River (part of today's Revelstoke herd), and a northern component, north and west of that river (part of the Wells Gray herd).

Historically, Caribou were widespread in the southern Shuswap Highlands although they may never have been numerous. The record indicates Caribou were found on all the higher ranges and, for some of the year, in the timbered valleys of the major watersheds. The first suggestion of declining

Table 23. Historical observations of Caribou in the Northern Kootenay Mountains.

Date	Location	Reference	Comments
Sept, 1865	Little Dalles	Moberly 1866	Killed a Caribou on Columbia River
Fall 1895	Canoe River	Lee 1895	Caribou "very plentiful" along the Canoe River
Early 1900s	Vicinity Bald Mtn	Wheeler 1905	"plentiful"; several herds seen in parklands of Bald Mtn, Mt. Sir Donald, Spillimacheen Mtns
1906	Revelstoke area	Williams 1906a	"reported...more plentiful than for some years"
Fall 1908	Albert Canyon	Laing 1979	A. Brooks saw 38 Caribou, killed 4 e of canyon
Oct 1908	Hd Beaver Ck	Taynton 1908	Caribou at head Beaver and Spillimacheen Cks
July 1, 1911	Revelstoke area	Smythe 1911	Plentiful on mtns vicinity Revelstoke and Big Bend
1912	Gold Range	Wheeler/Parker 1912	Caribou "abound" in Gold Range, w of Arrow Lk
1913	Revelstoke area	Squarebriggs 1913	"Caribou...are becoming quite plentiful on the banks of the Columbia north of here"
1915	Upper Downie Ck	Ferguson 1915	"a splendid place to hunt Caribou"
1918	Kootenays	Hunting regs	Hunting closure
1920	Duncan area	Baker 1921	"good reports" of Caribou in the Duncan district
1926	Upper Duncan	Dunwoody 1926	"quite a large herd" in the upper Duncan
1927	LaForme Ck	Dunwoody 1927	A fairly large herd reported vicinity of LaForme Ck
1928	Big Bend area	Dunwoody 1928	Largest herds north of CPR line, vicinity Big Bend
1928	Upper Duncan	Dunwoody 1928	A few Caribou, remnants of once-larger herds
1929	Big Bend area	Williams 1929	Fairly plentiful north of CPR to Big Bend district
1932	Revelstoke area	Kearns 1932	Caribou increasing between Revelstoke and Golden
1932	Glac. Natl. Park	MacDonald 1996	Park Warden reported Caribou "quite numerous"
1924–1936	Prairie Hills	MacDonald 1996	500–1000 counted each year; declined after 1936
1938	Ecoregion	Kearns 1938	Main range from Big Bend to the boundary; hunters report Caribou not hard to locate
1939	Ecoregion	Kearns 1939	Caribou well distributed over entire Division
1945	Glac. Natl. Park	MacDonald 1996	J. Munro estimated population at 70
1951	Revelstoke area	Robertson 1951	Caribou "plentiful"

numbers was expressed in 1918 when this section of the Shuswap Highland, lying south of the Canadian Railway, was closed to hunting. There may have been an increase in the population during the mid-1920s, similar to the increase in the northern part of the North Kootenay Mountains ecosection.

8b. Shuswap Highland – north

This portion of the Shuswap Highland ecosection extends from the upper North Thompson River north and west to the headwaters of the Cariboo River.

The early history of the Wells Gray herd suggests that Caribou were both abundant and important to native Indians, so important that the Chilcotin and Shuswap Indians fought on Battle Mountain over the right to hunt Caribou. By the turn of the century, Caribou were still plentiful and large numbers migrated into and out of the mountains each year. The population began to decline in the 1930s and early 1940s, reaching a low point by the late 1940s. There was then an increase until 1970, when 338 Caribou were counted during a single count; at this time the population was estimated at 350–400, double the estimate for 1955; it is likely there was a decline after 1970 (Stevenson and Hatler 1985).

9. The Cariboo

Although the Cariboo region encompasses several ecosections, some early historical observations refer to the Cariboo or a similar generality, roughly signifying the Quesnel Highland, Bowron Valley and Cariboo Plateau ecosections. A series of more specific observations follows Table 25.

As was so often the case, native Indians in the Cariboo relied heavily upon Caribou for food and clothing. Lieut. Palmer, when he travelled this part of the province in the early 1860s, deter-

Table 24a. Historical observations of Caribou in the Shuswap Highland, southern section.

Date	Location	Reference	Comments
Early	Park Range	MacDonald 1996	Caribou found between Mabel and Sugar Lakes
Aug 5, 1865	Cherry Ck	Turnbull 1865	Caribou seen vicinity Cherry Ck
1883	Spallumcheen Valley	McArthur 1883	The country…abounds with game of all kinds…there being Caribou " (and others)
Sep 17, 1891	Mabel Canyon	Wahl 1988	Numerous tracks (Mabel Canyon nr Mabel Lake?)
Spring 1894	Wap River	Wahl 1988	5 miles from head of lake, herd of 35–40 head; Harlan Range to the north good Caribou range
Sept 1894	Sicamous area	Streator 1894	"rather common in the mountains locally"
March 1906	Hunter Range	Blurton 1906	Caribou more plentiful in the mountains than during the past 12 years; "close on 200 animals in one place"
Dec 25, 1907	Adams Lk	Taylor 1907	Hunted from Cariboo Lodge; travelled up Adams R
July 1, 1911	Seymour Arm	Smythe 1911	Caribou plentiful on Seymour Arm, Shuswap Lk
Oct 30, 1911	Wap River	Blurton 1911	"Many" tracks on banks of river
Dec 19, 1911	Adams Lk vicinity	Wood 1911	Asked for a game reserve vicinity Adams R and Lk, Seymour Arm and Celeste Ck; for Caribou (and others)
1912	Shuswap Lake	Blurton 1912b	Caribou hunted on Shuswap Lks and Seymour R
Summer 1913	Celeste Ck	Dawson 1913	Hunters guided for Caribou in mountains
1918	S½ ecosection	Hunting regs	Hunting season closed
1920	Sawtooth Rge	Baker 1921	Herd of about 50 Caribou reported
1920s	Hunter Range	Stev/Hatler 1985	A sighting of 98 Caribou recorded, Mara Mtn
1924	Upper Adams R	Fernie 1924	Large band reported north of Adams Lk district; Caribou repcrted near Blue R and Avola
1925	Shuswap Lk	Fernie 1925	Increasing and expanding, especially "east and north of the Great Shuswap Lake"
1926	Hunter Range	Fernie 1927	Caribou band reported; increasing
1928	Seymour Arm	Fernie 1928	Caribou near Seymour Arm
1932	Seymour Arm	Robertson 1932	Caribou reported
1937	Hunter Range	Ritcey n.d.	"abundant" on Hunter Range
1938	Shuswap Lk and opp Vavenby	Robertson 1938	A "number" seen on Scotch Ck, Shuswap Lake; 16 counted on 'Lost Creek' (prob Reg Christie Ck)

mined that the Caribou "frequent the mountains and valleys, and are hunted in winter . . . for their skins and meat . . . by the Carrier Indians".

The author believes MacGillivray's 1827 observation refers to the mountains *east* of the Fraser River in the vicinity of Fort Alexandria. In support of this assumption, in the same report he specifically refers to Caribou in the Chilcotin, thus treating Caribou west of the Fraser separately. Caribou were numerous in the early days and apparently their numbers held up throughout the rush of gold seekers during the mid- to late-1800s. The population began what was to be a major decline sometime in the mid-1930s and then began a slow increase in the early 1950s.

This alarming decline in the population – a situation about which Inspector Robertson had regularly reminded his superiors since 1937 – prompted Robertson to repeatedly ask for a thorough investigation. In 1952 he suggested a study along the lines of the research underway at the time by Lawson Sugden on California Bighorn Sheep (*Ovis canadensis californiana*) in Churn Creek (Robertson 1952).

10. Cariboo Plateau and Quesnel Highland
An area from Bonaparte River north to Quesnel and east to include Canim Lake, Horsefly Lake, Quesnel Lake, Cariboo Lake and surrounding mountains; part of today's Wells Gray and Cariboo Mountain herds.

All the evidence suggests that Caribou were plentiful in this ecoregion in the early days of historical record. Reports from about the turn of the century and well into the 1920s indicate a healthy population. The Dragon Mountain Range observation requires an explanation. The BC Gazeteer lists a Dragon Mountain Range west of Wells (vicinity Willow River and Slough Creek) and also a Dragon Mountain south of Quesnel. The only clue to Robertson's meaning is his 1934 reference to a mountain range east of Marguerite. Because of this reference to Marguerite, the author believes he meant Caribou in the Dragon Mountains south of Quesnel. Caribou bands towards the Fraser River in the vicinity of Quesnel probably declined in the early part of this century and disappeared in the late 1930s

Table 24b. Historical observations of Caribou in the Shuswap Highland, northern section.

Date	Location	Reference	Comments
mid-1800s	Clearwater V	MacDonald 1996	Herds migrated through Clearwater Valley
About 1875	Battle Mtn	Akrigg and Akrigg 1988	Named after battle between Chilcotin and Shuswap Indians over rights to hunt Caribou
1877	Clearwater V	MacDonald 1996	Caribou (and others) "abundant"
1906	Clearwater Lks	Williams 1906a	"good" reports of Caribou
About 1910	Blue River (?)	Martin 1993	During early years of CNR, Caribou crossed tracks in such numbers that train was forced to stop
1913	Blue Lake	Green 1913	Numerous Caribou seen vicinity Blue (Azure?) Lake
Dec 1918	Clearwater	Aiken 1918	Caribou "plentiful"
Early 1920s	Mtns vicinity Clearwater R	Glynn-Ward 1926	During an annual migration: "impossible to count them [the Caribou]; we could only guess at their hundreds"
1924	Clearwater vicinity	Fernie 1924	"plentiful and increasing", Clearwtr and Myrtle Lks
1927	Clearwater	Fernie 1927	Plentiful in Clearwater area
About 1930	Battle Mtn	Ritcey n.d.	Approx 75 counted on Battle Mtn
1933	Clearwater	Robertson 1933	"fairly numerous" in the Clearwater valley
1930s	Blue River	Martin 1993	Caribou easy to shoot during the 1930's Depression
1935	Wells Gray Pk	Edwards 1956	Population declining
1936	Clearwater vicinity	Robertson 1936	Cougar killing Caribou calves
1938	Clearwater	Robertson 1938	"small bands throughout...the Clearwater district"; roughly 40 Caribou on Battle Mountain
1939	Clearwater	Robertson 1939	Popln low, cougar killing calves; asked for hunting closure
1945	Wells Gray Pk	Edwards 1954	Population low
1946	Ecosection	Hunting regs	Season closed
1952	Wells Gray Pk	Edwards 1954, 1956	Increase after 1945; popln est at 220 animals
1970	Wells Gray Pk	Stev/Hatler 1985	Estimated 350–400 Caribou

Table 25. Historical observations of Caribou in the Cariboo region.

Date	Location	Reference	Comments
1827	Cariboo	MacGillivray n.d.	Caribou in the mountains of the Fort Alexandria District.
Mid-1800s	Cariboo	Palmer 1863	"The 'Caribou', a species of raindeer from which the region derives its name...frequent the mountains and valleys"
1882	Cariboo	Anderson 1882b	The "Tahcully", or Carrier Indians, named the mining region known as the Cariboo, "Ho-tsee-kaya" or Caribou land
1908	Cariboo	Williams 1908c	"The best locality to hunt Caribou [and others]...is the Cariboo District, outfitting at Barkerville or Quesnel Forks"
1912	Quesnel area	Davies 1912	Caribou "are seen in plenty"
1924	Cariboo	Fernie 1924	"very plentiful" in the Cariboo District
1927	Cariboo	Fernie 1927	Caribou plentiful in the Cariboo
1934	Quesnel area	Robertson 1934	Holding their own in the Quesnel area
1937	Cariboo	Roberston 1937	"A pronounced scarcity is reported over most of this Division"
1938	Cariboo	Robertson 1938	Caribou "in small bands throughout the Cariboo"
1939	Cariboo	Robertson 1939	"Practically every officer [with Caribou] reports a scarcity"
1946	Cariboo	Hunting regs	Hunting season closed
1948	Cariboo	Robertson 1948	Have "dwindled down to a mere remnant" of earlier numbers
1949	Cariboo	Robertson 1949	"urgent necessity for a survey of Caribou"
1953	Cariboo	Butler 1953	"slight increase" in several areas
1954	Cariboo	Butler 1954	"sighted in increasing numbers" in several areas

Table 26. Historical Caribou observations on the Cariboo Plateau (5) and in the Quesnel Highland (16) ecoregions.

Date	Location	Reference	Comments
About 1850	Dragon Mtn Rge	Robertson 1938	Large herds; moved out when country settled
1901	Horsefly R forks	Laing 1979	Allan Brooks noted Caribou sign, scarce and old
Nov 25, 1901	Horsefly R	Burr 1901	"abounds in game, Caribou...being very plentiful"
July 19, 1909	Quesnel Lk	Williams 1909b	Caribou hunted in Quesnel Lake country
June 1,1911	Horsefly R	Boursin 1911a	"said to be...many Caribou" at head of Horsefly R
Summer 1912	Hendrix Ck (?)	Campbell 1912	A few Caribou seen (a survey along the 52nd parallel between 120th and 122nd meridian)
1913	Quesnel Lk area	Muir 1913	Requested a game reserve for Caribou (and others) including Quesnel and Clearwater Lks
May 22, 1913	Keithley	Davies 1913	Suggested that Chilcotin Indians were going to "slaughter" Caribou (and others)
Summer 1914	Horsefly and Quesnel Lks	Murray 1914	"the shores of Horsefly and Quesnel Lakes offer... Caribou"
Nov 1915	Quesnel Lk	Hadley 1916a	18–20 Caribou counted at Quesnel Lk
May 9, 1916	Horsefly area	Hadley 1916b	"quite a few Caribou in [the Horsefly] district"
Summer 1918	Horsefly and Quesnel Lks	Butterfield 1918	"paradise for hunters...beautiful heads of...Caribou [were seen]"; plentiful on Quesnel Lk
Dec 17, 1918	Quesnel Lk	Aiken 1918	Caribou plentiful
Summer 1920	Quesnel Lk	Haggen 1920	"very plentiful" near Quesnel and Cariboo Lks
1920	Canim Lk	Baker 1921	Small herd on south side Canim Lk
1925	Canim Lk vicinity	Fernie 1925	Indians accused of killing Caribou for their hides
1930	Quesnel Lk	Sulivan 1930	Caribou "very plentiful" in the Quesnel Lk and upper Horsefly district
Early 1930s	Quesnel Highlands	Russell and	Trappers and guides recalled that, within about 3 years, Caribou "seemed to disappear"; some dead Caribou found.
1934	Dragon Mtns	Robertson 1934	Caribou e of Marguerite not so plentiful as earlier
1936	Quesnel Lk	Robertson 1936	"limited number" of Caribou in Quesnel Lk area
1937	Quesnel Lk	Robertson 1937	"few small bands", hdwtrs Quesnel and Horsefly Lks

Table 27. Historical observations of Caribou in the Cariboo Mountains.

Date	Location	Reference	Comments
July 1863	N Thompson	R Milton and Cheadle 1865	Tracks of Caribou found in forests on mid- or upper Thompson R; impossible to locate precisely
July 12, 1865	Cariboo Mtns	Mackay 1865	"vast quantities of game including Caribou" between Tête Juane Cache and Barkerville
Fall 1895	Canoe River	Lee 1895	Caribou "very plentiful" along the Canoe R
Early 1900s	Vicinity Sinclair Mills	Martin 1993	Early resident reported a regular migration from Cariboo Mtns across the Fraser into the Rockies
1910	Slim/Dome Cks	Coryell 1910	Caribou found on hills near Slim and Dome cks
Oct 1, 1911	Upper Fraser R	Boursin 1911b	Above Goat Rapids Caribou were plentiful
1912	N. Thompson	Johnson 1912	"pre-eminently a Caribou country" btwn Tête Juan Cache and upper North Thompson R
Summer 1912	Goat R	Augustin 1912	Caribou numerous on Goat R
Summer 1913	Canoe River	Allan 1913	"abundance of game, including...Caribou"
Summer 1913	Clearwater vicinity	Green 1913	Caribou on upr Clearwater R., Hobson and Azure Lks
Summer 1913	Upper Fraser R	Morkill 1913	In Goat R area, "Caribou find their natural range"
Fall 1915	Upper Fraser	La Salle 1915	108 seen in 31 days on upper Goat R
Feb 1917	Goat R	Fisher 1917a	Caribou plentiful
June 1917	Slim Lk	Fisher 1917b	Caribou plentiful in vicinity of lake
1918	McBride vicinity	Parsons 1918a	Some Caribou shot showing pneumonia symptoms; some found dead in bush
1928	N Thompson R	Fernie 1928	Caribou "shown up very well" on North Thompson
1929	N Thompson R	Sulivan 1929	"fair numbers"on N Thompson
About 1930	Slim Creek	Boudreau 1998	About 1000 Caribou crossed ck; seen by Einar Jensen
Early 1930s	Upper Haggen Ck	Munro 1947	Told by J. Cochran (guide) popln est at 60–75; 45 near one lick in July; 53 in one herd in Jan 1931
1931	Upper Fraser	Van Dyk 1931	"Very good reports" of Caribou on the upper Fraser
Winter 1934	Ghost Ck	Bloomfield 1979	"large wintering bands" vicinity Caribou R and Ghost ck
Mid-1930s	Upr Haggen Ck	Munro 1947	decline began mid- to late-1930s, rate of decline increased in early 1940s
Summer 1938	Dome Ck	Bloomfield 1979	Small band observed
About 1946	Upr Haggen Ck	Munro 1947	60–75 in early 1930s down to 4–5; wolf pred'n blamed
Fall 1955	Slim Ck vicinity	Bloomfield 1979	"Large groups" on Everett and Slim cks

or the 1940s. Throughout the remainder of this area – the Quesnel Highland – numbers began to decline some time during the early 1930s, probably before 1935. Long-time residents interviewed by Don and Sharon Russell in the summer of 1975 had vivid recollections of the sudden drop in Caribou numbers in the early to mid-1930s, with little to explain this phenomenon: no logging, forest fires minimal, hunting insignificant. One guide, Glen Walters, recalled finding a few dead Caribou in the vicinity of Clearwater Lake at about the time the Caribou numbers declined. Inspector Robertson, in several reports throughout the 1930s and early 1940s, blamed the decrease on predation by cougar (*Felis concolor*) and wolves, and sometimes on hunting.

11. Cariboo Mountains

The mountains of the upper North Thompson River and west of the upper Fraser River north to Purden Lake; part of today's Yellowhead herd. Caribou were regularly designated as abundant in the Goat River drainage, but were found from Slim Creek in the north to the upper North Thompson River in the south. The historical record is not clear in describing when numbers began to decline, except for Caribou on upper Haggen Creek. There was some loss to sickness in 1918 but that apparently did not have a lasting effect; however, some areas did show a decrease in the mid-1930s.

12. Bowron Valley

The upper Cottonwood, Willow and Bowron Rivers; also included are all sightings in the Bowron Lakes Park area and surrounding mountains (some of which fall within the Cariboo Mountain ecosection); today's Barkerville, George Mountain and Narrow Lake herds.

Table 28. Historical observations of Caribou in the Bowron Valley.

Date	Location	Reference	Comments
Aug 8, 1863	Lightening Ck	Lindsay 1972	It is said there will be "plenty of the Deer called Criboeff to be had there in the winter"
June 13, 1865	Bowron Lake	Mackay n.d.	Caribou plentiful in the mountains
Aug 19, 1865	South-Fork Lk	Anon 1866 (and others)	Area "well stocked with game, Caribou"
Sept 1900	Bear Lk	Brooks 1928	Caribou wintered near Bear [Bowron] Lk
Sept 1900	Cottonwood R	Laing 1979	Allan Brooks saw frequent sign vicinity lower Cottonwood R; sign at Ahbou Lk and a group of 8 seen
Mar 24, 1908	Upr Hixon Ck	Edwards 1908	Caribou "are in plenty" in the heavy timber
June 3, 1908	Keithley Ck	Williams 1908d	Good Caribou hunting from Keithley Ck and north
1909	Upr Hixon Ck	Meikle 1909	"very numerous" to upper Naver Ck and Willow R
Dec 1910	Upper Willow	Roberts 1910a	"no scarcity of Caribou" on upper Willow R. and Barkerville District
May 7, 1911	Bowron Lk vicinity	Boursin 1911c	Caribou sign plentiful on 'Bear' Lk and Antler Ck
About 1912	Bowron R.	Galloway 1917	Tracks "in profusion" about 80 mi. from Bowron Lk
Fall 1912; 1913	East of Bowron Lk	Cochran 1964	On a 1912 fall trip, Caribou sign abundant; several bands seen, a herd of 27 on hdwtrs Dominion Ck; wolves evident; in 1913, "Caribou everywhere".
1914	Anderson Mtn	Butterfield 1914	Caribou on this range "very plentiful"
Summer 1914	Bowron Valley	Haggen 1914	Bowron River area "well stocked" with Caribou
Oct 1, 1917	Hixon Mtn	Fisher 1917c	Caribou plentiful in vicinity Hixon Mtn
About 1918	Isaac Lk	Martin 1993	Pat Martin told by Hugh Hughes of 2,000 (+/-) Caribou on frozen Isaac Lk
Dec 17, 1918	Barkerville vicinity	Aiken 1918	Caribou plentiful
1922	"	Haggen 1922	"holding their own", also Cottonwood and Van Winkle
1932	"	Roberston 1932	Caribou "numerous" near Barkerville
1933	Willow R area	Robertson 1933	Caribou populations on headwaters of the Willow, Bowron and Swift Rivers about the same as 1932
1934	Bowron Lks	Robertson 1934	wolves killing Caribou calves, N Bowron Lk Sanctuary
"	Cariboo Lk to Goat R	Munro 1947	Caribou from upper Goat R to Cariboo Lk declined about the same time as the upper Haggen Ck group
1936	Bowron Lks	Robertson 1936	Scarce at Bowron Lks; "doing well" in Willow R Dist
1937	Willow R	Robertson 1937	"quite numerous" on both sides of the Willow R
1944	Bowron Lake	Robertson 1944	"Reports...on the stand of Caribou are not at all reassuring"; a "thorough investigation" required

Caribou were plentiful when the first miners, prospectors and settlers arrived in the mid-1800s. The population held up well into the 20th century but began to decline sometime in the 1930s, probably about 1935 or 1936. J. Cochran, the principle guide in the area, felt the decline accelerated in the early 1940s; he blamed wolf predation. Inspector Robertson continued to express his concern about the decline in Caribou throughout much of the area, although Caribou on the Willow River may not have suffered the same losses as elsewhere.

The band of approximately 2000 Caribou sighted at Isaac Lake requires an explanation. This information was double-checked with Pat Martin and he confirms that Hugh Hughes, police constable and later game warden, was a reliable observer and there is no reason to doubt that he saw a large number of Caribou on Isaac Lake. This is not to imply that these Caribou resided in the vicinity of the lake; rather, they were probably moving through. Such a concentration may not be out of line, considering concentrations reported elsewhere in British Columbia.

Table 29. Historical observations of Caribou in the Upper Fraser Trench.

Date	Location	Reference	Comments
Winter 1887/1888	Lwr Portion of Trench	Turner-Turner 1888	Caribou near cabin most of winter; could have killed many
Early 1900s	Sinclair Mills	Martin 1993	Regular migration across the Fraser into the mtns
Summer 1908	Upper Fraser	Edwards 1908	Not in any great number from nr Prince George to Grand Canyon
Sept 21, 1910	Lwr Morkill R	Roberts 1910b	Observed at mouth of Morkill; "reason to believe they are increasing" in the mountains
Feb 27, 1911	Trench	Williams 1911c	"from Fort George you will do all your hunting by canoe...there are any number of Caribou"
Jan 1, 1913	Trench	Boursin 1913a	Good reports along Grand Trunk Pac right-of-way
1917	Trench	Williams 1917d	"reported to have been more plentiful than usual along the eastern part of the G.T.P."
Fall 1918	Penny	Bloomfield 1979	Approx 100 Caribou swam the Fraser R

13. Upper Fraser Trench

The Fraser River valley from Donald Station in the south to vicinity of Purden Lake. These observations are documented along the banks of the Fraser River not to suggest a separate population, but to emphasize the past importance of the area for Caribou.

Turner-Turner spent the winter of 1887–88 on the banks of the Fraser River, about six days' canoe travel above Fort George, where there were plenty of Caribou: "the only game in our locality were woodland Caribou". The Indians whom Turner-Turner encountered along this part of the Fraser River began hunting Caribou in the spring. Good numbers of Caribou in the Trench apparently continued during the first two decades of the 20th century, and perhaps later. The effect of the new railway upon Caribou is not clear (construction along the banks of the upper Fraser began in 1910), but the population appears to have remained high at least until 1918.

14. Northern Park Ranges

East of the upper Fraser River, between the Donald and Morkill Rivers; part of today's Central Rockies herd.

Palliser's observation of large herds of Caribou in the valley of the Smokey River is a reference to Caribou in Alberta. This is included since mountains on the headwaters of the Smokey River form the eastern edge of the Northern Park Ranges; radio-telemetry studies have shown that Caribou today move back and forth between Alberta and BC (Stevenson and Hatler 1985) and it is very likely that a similar migration occurred in historical times. There is nothing in the historical

Table 30. Historical observations of Caribou in the Northern Park Ranges.

Date	Location	Reference	Comments
Winter 1859	Upr Smokey R	Spry 1963	"large herds" in the 'Smoking' R valley
Summer 1907	Morkill R	Edwards 1908	"very plentiful"; bands of 3–15 seen away from Fraser
Summer 1912	Morkill R	Augustin 1912	Numerous in Morkill R country
Summer 1912	Horsey Ck vicinity	Morkill 1912	Plentiful on Horsey Ck to Holmes R
May 1913	Mt. Robson Pk	Boursin 1913b	"very plentiful in the northern and northwestern part" of the park
Summer 1913	Morkill R area	Walker 1913	Caribou (and others) "abound"
June 1916	Mt Robson	Hewitt 1916	A new species of Caribou identified
1917	SE McBride	Fisher 1917d	"thick...in the mountains towards the southeast"
1920	Tonquin Valley	Baker 1921	Caribou found nr Tonquin V and below Mt Geikie
Winter 1935	Fleet Ck	Bloomfield 1979	35 Caribou
July 1936	Hellroaring Ck	"	60 Caribou with many calves
Aug 1955	Moose R	Ritcey 1999	16 counted; winter range in Moose R valley
Summer 1957	Mt Rider	Bloomfield 1979	Several bands in large, open meadows
Summer 1974	Tonquin Valley	Stev/Hatler 1985	20+ counted

record to suggest any major change in Caribou numbers to the 1950s.

4.2.3 Sub-boreal Interior Ecoprovince (Figure 7)

1. Hart Ranges and Front Ranges ecosections
The Hart Ranges has been divided into a north and south section to separate Mountain and Northern Caribou; most of today's Yellowhead herd.

Although neither Alexander Mackenzie nor Simon Fraser saw many Caribou when they travelled up the Peace River and across to the Fraser River in the summers of 1793 and 1806, it seems likely that Caribou were in the mountains. Alexander Mackenzie described the clothing worn by the Indians on the upper Parsnip River in the summer of 1793: their "dress consists of robes made of skins of...rein-deer [and others], dressed in the hair... [and] leggins...[and] shoes...made of dressed...rein-deer skins." Caribou were numerous around the turn of the century, so much so that Bryan Williams created a large game reserve between the McGregor River and the upper Fraser, including drainages of the Morkill and the Torpy Rivers, to protect Caribou as well as several other species. Caribou numbers remained high well into the 20th century, at least until the 1930s. There is little evidence of a major decline in numbers from the observations found, except for one guide's comment that he had seen a very noticeable decrease in the population from the mid-1930s.

Michael Bloomfield studied Caribou on the upper Fraser River from September 1975 to December 1977. His study area included parts of the following ecosections: Cariboo Mountains, Northern Park Ranges, Hart Ranges, Upper Fraser Trench and Bowron Valley. Early Caribou history was an important part of his research and he concluded that Caribou in his study area had declined sometime prior to the 1970s. However, there is nothing in his study, nor in this author's research, that describes any major decline until the early- to mid-1960s.

4.3 Boreal Caribou

4.3.1 Taiga Plains Ecoprovince

Only three early references to Caribou in the Taiga Plains were located and it is assumed all three refer to the Boreal ecotype. Preble (1910) reported there were Caribou in the muskeg "about 150 miles north of Fort St. John"; Milligan

Table 31. Historical observations of Mountain Caribou in the Front Ranges (2), the southern Hart Ranges (13) and MacGregor Plateau (1) *.

Date	Location	Reference	Comments
June 9, 1793	Nr Table R	Lamb 1970	Alex. Mackenzie noted the importance of Caribou to the Indians (see text)
July 1806	James Ck	Lamb 1960	A Caribou seen
Summer 1907	McGregor R	Tuck 1963	Caribou "abound"
Summer 1907	Torpy R	Edwards 1908	Very plentiful
Aug 1910	Upper Fraser	Williams 1910	Large game reserve created for Caribou (and others); incl valleys of the Morkill and Torpy Rs
Summer 1914	Vic Willow R	Morkill and Boulton 1914	Frequently seen near Eaglet and Hansard Lakes
Feb 18, 1915	McGregor R	Ryan 1915	Large herds Caribou on 'Big Salmon' (McGregor R)
July 1, 1916	Mischinsinlika Ck	Van Dyk 1916	Indians killing Caribou at head of creek
Dec 1916	Upper Wapiti R	Parsons 1916	"very numerous in mtns on upper Wapiti and Murray Rs; suggested a reserve
May 16, 1917	North of Penny	Fisher 1917(d)	Caribou "thick"; 4–5 bands, approx 200 animals
1917	Torpy R	Williams 1917d	Some good bands on higher ranges of the Reserve
Spring 1940	Herrick Ck	Stev/Hatler 1985	30–40 reported
1940	Torpy R area	Bloomfield 1979	Approx. 150–200 located on WTorpy and Torpy R
Spring 1944	Torpy R area	Munro 1947	Guide said population "greatly reduced" within last 10 years; only 18 seen on Torpy R in May 1944
June 1944	Cecilia Lk	Bloomfield 1979	About 100 sighted just inside Alberta border
Summer 1944	Walker Ck and Torpy R	Stev/Hatler 1985	35–50 near Walker Ck; 45 north of Torpy R in 1948
1962	Upper Narraway	Bloomfield 1979	Group of 67 seen throughout the year

* numbers in brackets refer to number of observations

(1915), when he was surveying in the Peace River Block to Fort Nelson, reported that "woodland Caribou. . . found north as far as Fontas River"; and B.C. Police Constable Forfar, reporting on the game conditions in the Nelson River area in 1925, mentioned a few Caribou in the muskegs between the Nelson and the Hay Rivers (Forfar 1925).

5.0 DISCUSSION

5.1 Distribution

The distribution of Caribou today is illustrated in Figure 8 and distribution during the late 19th century in Figure 9. Comparing the two, there has been little change throughout northern British Columbia, north of about 55° latitude. In the south, however, there has been a pronounced reduction in the area inhabited by Caribou. At one time, Caribou were found from the upper Bridge River north to the Nass Range in the Coast Mountains; east of these mountains, Caribou inhabited most of the forests of the interior plateau from about Alexis Creek north to the Omineca and Skeena Mountains. In the southern interior, Caribou were found in parts of both the Southern Thompson Upland and the Northern Thompson Upland, most of the Okanagan Highlands, and east along the general vicinity of the 49th parallel – sometimes south of the United States/Canada border and sometimes north – to the Galton Range of the southeast Kootenays; and north throughout most of the mountains and forested areas of the Kootenays and the Cariboo to the Hart Ranges and the northern Rocky Mountains.

5.2 Abundance

Determining an accurate population figure for Caribou has not been easy (Hatler 1987b). Today (1997 to the present) there are an estimated 16,500 Caribou in the province, based on recent census data. Earlier estimates may not be quite as accurate. Heard and Vagt (1998) estimated 18,000 in 1996 and Bergerud (1978) calculated there may have been 20,000–24,000 in 1970, followed by a decline; Robinson (1964) estimated 40,000 in the early 1960s. This range of estimates made over the last 35 years is included, not to suggest a decline from 40,000 to 16,500, but to indicate the difficulties biologists faced when attempting to determine a current population figure, let alone guessing at their historical abundance. MacDonald (1996), basing his calculations on 40,000 Caribou in the early 1960s, believed that a population of 80,000 for the 1910–1920 decade was not unreasonable. However, Don Robinson acknowledged that the figure of 40,000 was questionable, and it is likely that a combination of optimism and incomplete field work led to that total; that, in turn, led to the suggestion of 80,000 for the early 20th century. Ritcey (1991) estimated a more conservative provincial population of 30,000–40,000 Caribou at the time of first European contact.

In the discussion below, the author has not attempted a firm estimate of Caribou numbers in early historical times, but has resorted to the relative terms of "few" and "common". The designation "common" for mountain Caribou in the south describes lesser numbers than a "common" designation for northern Caribou above 55° N latitude. Figure 10 illustrates this interpretation of historical density throughout the province.

5.3 Changes in Abundance

The population changes illustrated in Figure 11 do not follow the textual sequence but are arranged in an historical sequence: 'Okanagan', the first graph in Figure 11, is derived from Table 18; 'South Kootenays' from Table 19; 'Main Kootenays' from Tables 20,21, 22, 23 and 24a; 'Western Chilcotin' from Tables 15 and 16; 'Tweedsmuir' from Table 14; 'Cariboo' from Tables 25, 26 and 27; 'Wells Gray' from Table 24b; 'Northern' from Tables 1, 2, 3, 4, 5 and 6. These changes are described using three levels of abundance ("common", "moderate" and "few") rather than the "common" and "few" used in Figure 10; change is more accurately presented using an intermediate between "common" and "few".

5.3.1 Northern Caribou

a) Caribou north of about 55° N latitude probably exhibited little change in abundance from

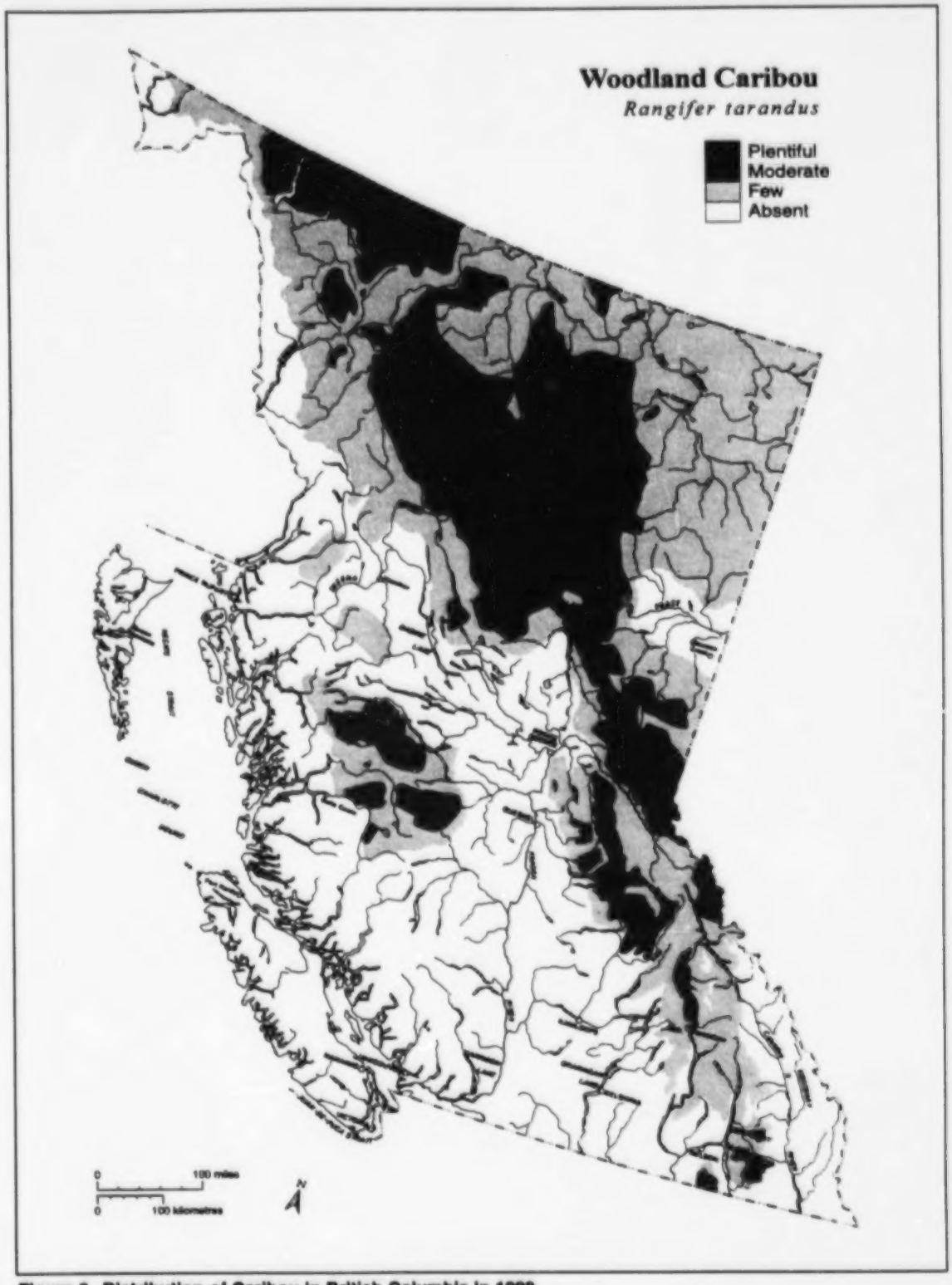


Figure 8. Distribution of Caribou in British Columbia in 1999.

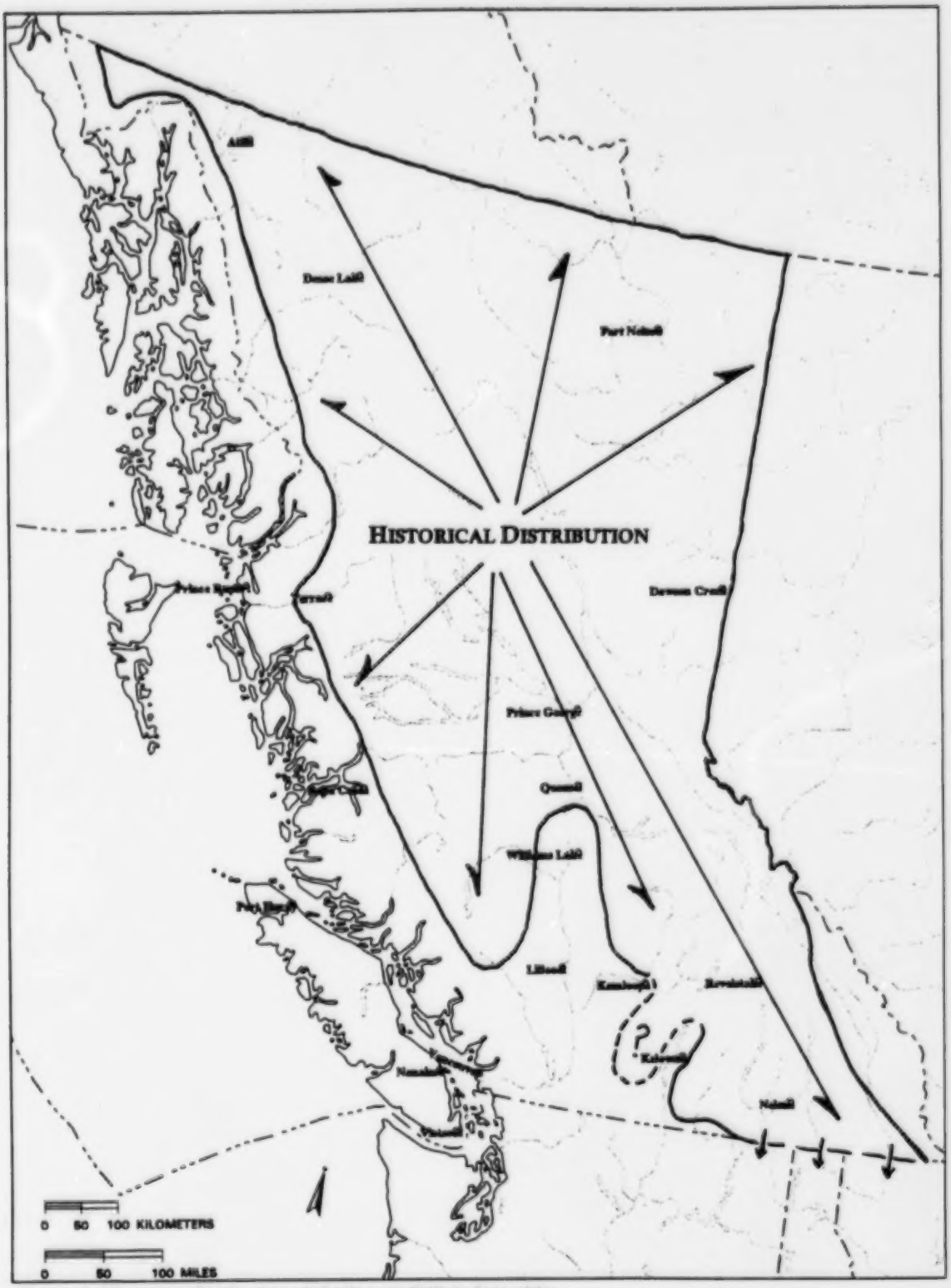


Figure 9. Historical distribution of Caribou in British Columbia.

the late 1700s to 1970 (Figure 11). Based on the information gathered, there was a temporary and modest decline from "common" in the mid- to late-1930s, but reports at the time suggest numbers began to increase by 1940. However, in the early 1970s some guide-outfitters told Tom Bergerud (1978) that "moderate" Caribou numbers persisted in the north throughout the 1940s and into the early 1950s. This difference of 10–15 years between the decline and increase proposed by the author, and that proposed by Bergerud (1978) and Bergerud and Elliot (1986) is important as an intensive wolf control program began in the late 1940s.

b) Northern Caribou south of 55° N latitude. The relative abundance of Caribou in the Nechako Upland and Western Chilcotin Upland ecosections is known largely through early reports of an alarming decline in their numbers (Figure 11). The western Chilcotin Caribou were reported to be less in number shortly before 1910, while the Tweedsmuir Caribou began their decline about a decade later. Both populations were depressed until the early 1940s, when the western Chilcotin herds began an increase continuing to the present, while the Tweedsmuir Caribou exhibited a general increase but with some fluctuation over the years.

Northern Caribou elsewhere (south of Charlotte Lake to the upper Bridge River, in the Nass and Kitimat Ranges and throughout the lowlands of much of the Central Interior and Sub- boreal Interior) decreased in number or disappeared altogether, but there is little in the historical record to describe the chronological sequence of either their decline or demise.

5.3.2 Mountain Caribou

There are a series of relatively specific historical observations illustrating a sequence of population changes for mountain Caribou in the Okanagan Highlands, the southern Kootenays, the main Kootenays, the Cariboo and Wells Gray Park. The population changes within these five areas (Figure 11) may mirror changes in areas nearby.

a) The Okanagan and southern Kootenay Caribou. These Caribou prompted the first reports of a decline following the arrival of Europeans in British Columbia, and by the first decade of the 20th century both populations were lower than during the late 19th century. In the Okanagan, this decline continued until sometime in the late 1950s, when Caribou finally disappeared from the mountains east of Okanagan Lake. The south Kootenay Caribou probably began to decline about the same time as Caribou in the Okanagan but did not disappear entirely; a few, scattered bands remain today.

b) The Kootenays (except the extreme south). Throughout the historical description of Caribou in the Kootenays, there is no sustained reporting signifing an early, dramatic drop in numbers. However, there has been a decline since the time of Indian hunting described by James Teit, and from the early 1800s as described by David Douglas when he travelled the Arrow Lakes in April 1827. Baillie-Grohman (1900) referred to less Caribou by the end of the 19th century, but he is largely alone in his concern. Although Bryan Williams (1905a) referred to a rapid disappearance of Caribou in the *East Kootenays* in 1905 (the author believes he referred to the small herds in the south), he advised the Provincial Secretary in that same year that Caribou in the Kootenays were "numerous" (Williams 1905b). The best clue to the change in Caribou numbers was the hunting closure enacted in 1918, applicable to the area south and east of the Canadian National Railway (west from Jasper to Valemount, down the North Thompson River to Kamloops and then west and south, following the Thompson and lower Fraser Rivers). The reports prior to 1918 did not refer to disturbingly low numbers, and the reports after – until the late 1920s when Inspector Dunwoody wrote of past herds – continued in the same vein. On the surface then, one wonders why the closure? However, Baker (1921),

as chairman of the new Game Conservation Board, reported: "In southern British Columbia an effort has been made by the Board to conserve the *remaining herds* (author's emphasis) by a close season . . . good reports have been received". It is likely, then, that Caribou numbers declined in the Kootenays prior to 1918 but after the turn of the century. The 1918 hunting closure was successful and, although the population apparently did not increase to the "once large herds" of years past Inspector Dunwoody recommended an open season in the Kootenays in 1928, from the CPR line (Donald Station west to Salmon Arm) north to Big Bend. In the 1930s, there were further increases: Divisional Game Supervisor Frank Kearns observed in 1932 that, after many years of protection from hunting, "bands of Caribou to be found on practically every range within the Division"; he recommended a short season. There appears to have been little change from about the mid-1930s to the late 1950s, and hunting was allowed each year. There was a decline in the population after about 1960.

c) The Cariboo (Cariboo Plateau, Quesnel Highland, Cariboo Mountains and Bowron Valley ecosections). The historical data suggest a marked decline in Caribou numbers beginning in the mid-1930s (Figure 11), when the population dropped from "common" to "few " in about 10 years. The population remained low for another decade and then began a slow increase.

d) Wells Gray Park. Caribou numbers within what is now the Park and the area immediately surrounding the Park began to drop in the mid-1930s, about the same time that Caribou throughout the Cariboo region showed a decline. However, the evidence suggests this decline was not as severe as in the nearby Cariboo, that numbers were low for about five years, and then began a slow increase into the 1970s.

Mountain Caribou in other locations, particularly in the vicinity of Shuswap, Mabel and Bonaparte Lakes, in the lower Willow and Bowron River areas, in the upper Fraser Trench, and throughout the Northern Park Ranges and the southern Hart Ranges, have all declined. The historical data lack precision, however, and it has not been possible to determine when the declines began and what happened during the ensuing years.

5.3.3 Boreal Caribou

The historical evidence provides nothing to help describe any changes in distribution or abundance of this ecotype.

5.4 Threats to Caribou

Bergerud (1974) discussed habitat loss through fire or logging, and excessive killing from either predation or hunting as the main factors causing changes in Caribou numbers throughout North America. Stevenson and Hatler (1985), although emphasizing forestry practices, also listed transportation corridors, hydroelectric impoundments, mining activities and recreational pursuits as potential or real threats to the welfare of Caribou in central and southern British Columbia. MacDonald (1996), in his very detailed account of land use changes which have altered mountain Caribou habitat, added both the general increase of humans and the growth of agriculture, particularly ranching, to the above lists. This historical review has uncovered no new threats to Caribou. In the discussion which follows, the author assumed the sequence of events illustrated in Figure 11 accurately depicts the change in relative Caribou abundance throughout the province. That is, there was a major decline of *all* Caribou and, although occurring at different times in different geographical areas, all between the late 1890s and the mid-1940s.

5.4.1 Habitat loss from logging

The historical record for British Columbia provides no evidence that logging had any serious effect upon Caribou habitat during the time when Caribou experienced their first, major declines in recorded history, the years from about 1900 to the mid-1940s. Although there was active logging taking place during these years, it had not made

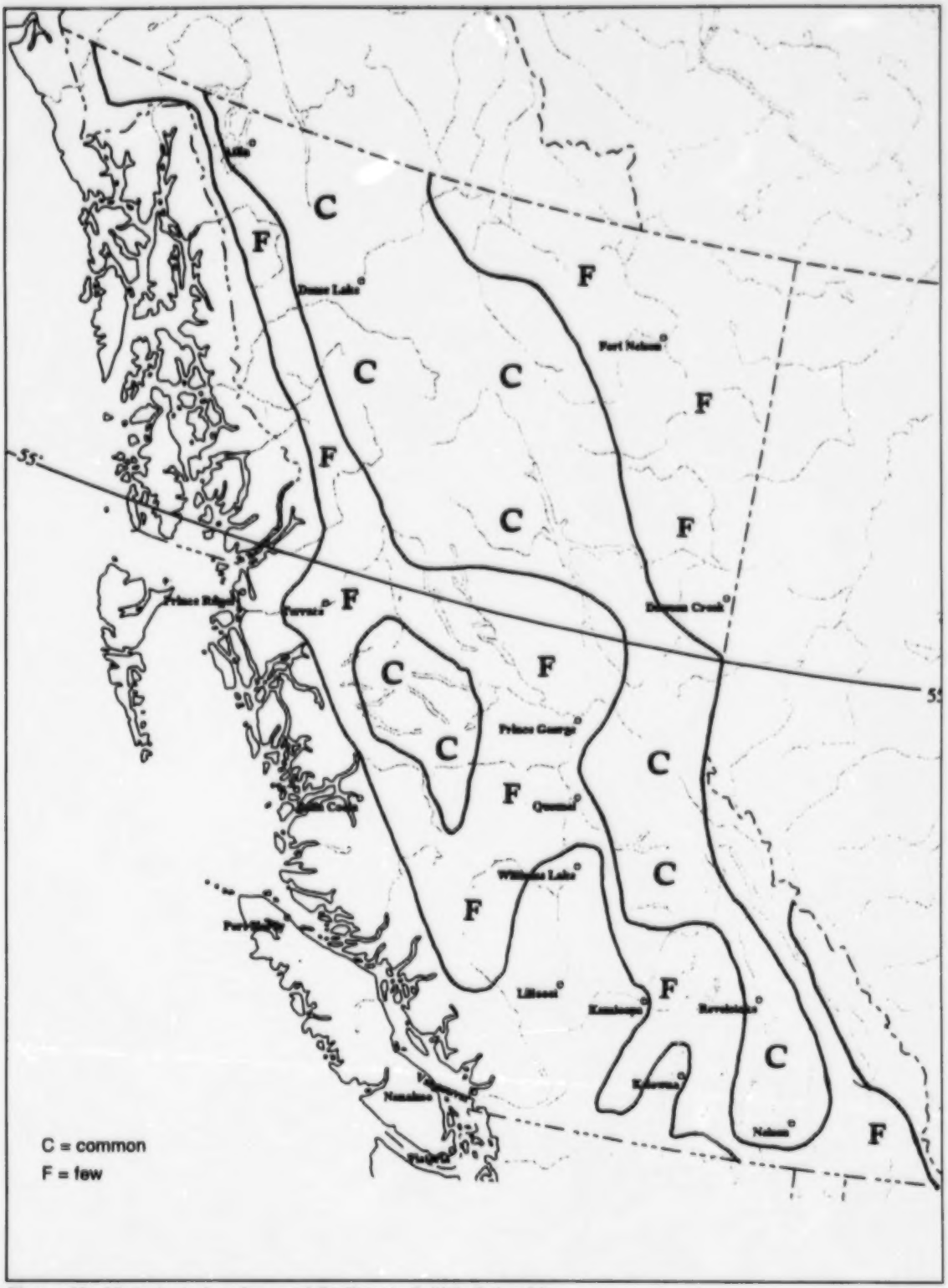


Figure 10. Historical abundance of Caribou in British Columbia.

any significant inroads into Caribou habitat. Further, based on several studies (Bergerud 1978, Bloomfield 1979; Seip 1992a; Russell et al. 1982; Stevenson and Hatler 1985; and MacDonald 1996) there is little to implicate forestry practices causing serious habitat loss up to about 1970, the end of this historical review. Ritcey (n.d.), an outspoken advocate for the critical role of habitat in the welfare of Caribou, has emphasized the destruction of habitat, often the result of logging, which generally took place after 1970.

5.4.2 Habitat loss from fire

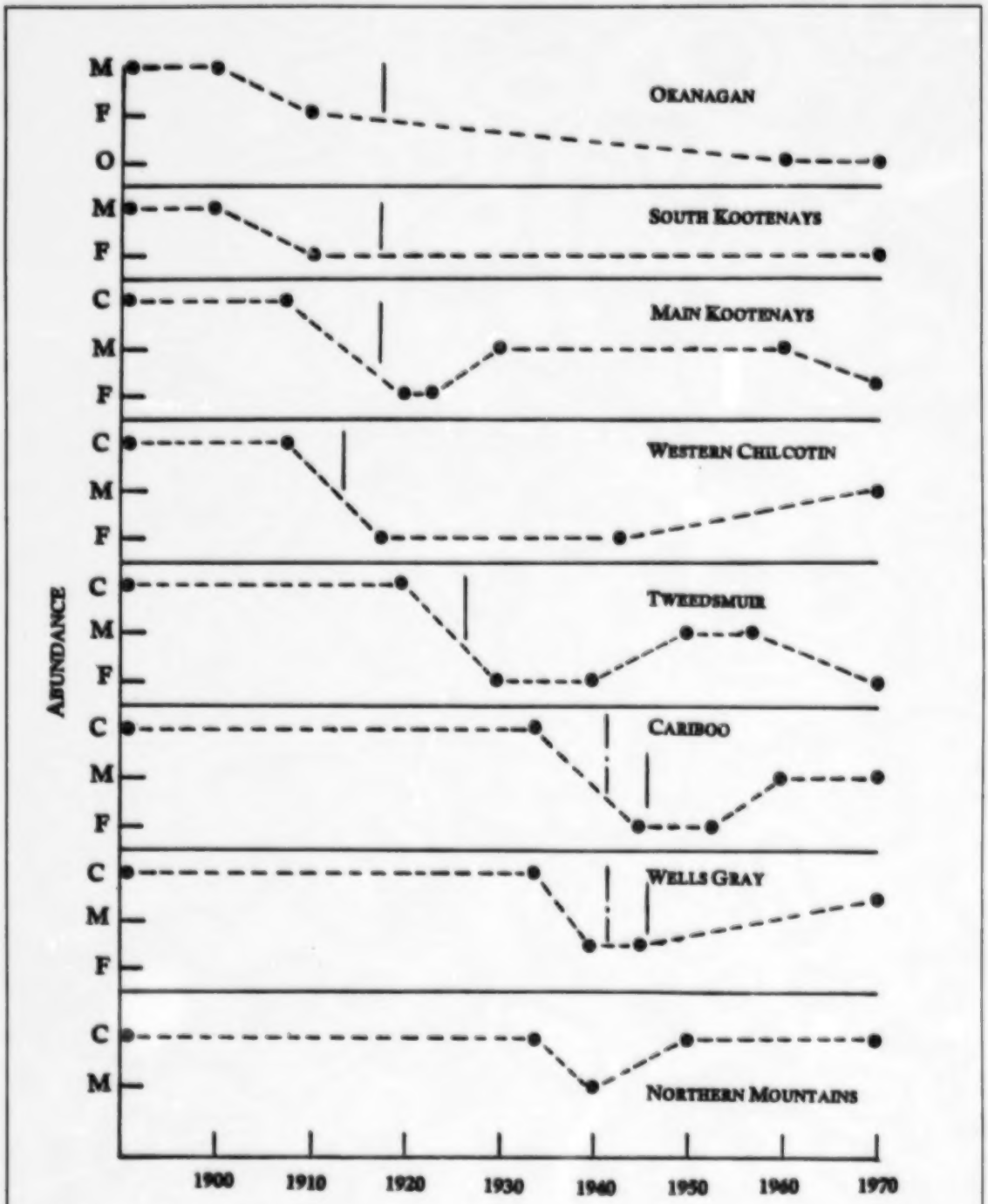
Large, uncontrolled forest fires, destroying both food and cover, have the potential to cause serious harm to Caribou populations. Further, the effects of fire are greater on mountain Caribou, dependant as they are on arboreal lichens available only late in forest succession, than on the northern ecotype. Baillie-Grohman (1900) considered the destructive effect of wild fires upon mountain Caribou habitat in the Kootenays. He believed that forest fires, perhaps deliberately set, had destroyed Caribou habitat, causing a major decline in Caribou numbers throughout the Kootenays in the late 1800s. Unfortunately, he offers no evidence of greater Caribou numbers before the turn of the century than a reference to well-beaten but old Caribou trails in the vicinity of Kootenay Lake. Edwards (1954) was the first in British Columbia to provide some tangible evidence of the effect of fire on wildlife. He attributed the decline of mountain Caribou in the Clearwater Valley area – which began in the mid-1930s – to a series of fires which burned from 1926 to the late 1930s, and removed about 975km^2 of mature timber below 1200m elevation. These fires destroyed an estimated 60%–70% of the Caribou's winter habitat and Edwards justifiably believed this habitat loss had a serious effect on wintering animals. The population either fell to a level supportable by the remaining winter habitat, or moved elsewhere.

However, any argument based on wild fire as the principle cause of Caribou declines throughout British Columbia is difficult to support. There is no evidence, for instance, of large fires burning over most of the Cariboo in the late 1920s and 1930s, destroying Caribou winter range and causing the loss of Caribou recorded at the time (Russell and Russell 1976). Perhaps the major difficulty with attributing too much to the influence of fire is that wild fires were an integral part of the forests long before we were here to record them, and sometimes start them (although it is known that native Indians did start forest fires before the arrival of the first Europeans, Spalding 1990). Kay (1997) has summarized much of what is known about early forest fires and vegetation change: "disturbance was the rule. Fires were common and structured most forest communities." It seems likely that wild fires burned regularly and destroyed Caribou habitat regularly, yet Caribou, through long migrations and often sudden shifts from one area to another, adjusted to the effects of fire.

5.4.3 Predation

Grey Wolves, Cougar, Black Bear (*Ursus americanus*), Grizzly Bear (*Ursus arctos*) and Coyotes (*Canis latrans*) have, at one time or another, been blamed for the major declines illustrated in Figure 11, with wolves the significant predator. These predators all prey upon Caribou to a greater or lesser extent and the concern is understandable. Cougar, for instance, were blamed for the disappearance of the Okanagan Caribou (Munro 1947), while it is generally agreed that wolf predation was at least one of the factors in the early decline of Caribou in Tweedsmuir Park, in the Cariboo and throughout the north.

Wolves have been considered a "problem" in British Columbia for a very long time and attempts to control them began early: the first bounties were paid in 1869 (Ball 1981) and ranchers were using poison in 1884 (Anon 1884) and probably earlier; trappers used poison on their own during the early decades of this century (Fisher 1918), and the Game Commission began to issue permits in 1945 to selected trappers wishing to poison wolves. Despite these attempts at control, wolves increased, at least during the early decades of this century, probably reaching a peak between 1942 and 1946 (Hatter 1950). With more



C = Common M = Moderate
F = Few O = Nil
Dash-dot vertical lines are reduced hunting seasons;
solid vertical lines are hunting closures.

Figure 11. Suggested population changes for certain Caribou populations from 1900 to 1970.

wolves, the Game Commission progressively increased the bounty, hired predator hunters, permitted shooting wolves from planes and, in 1951, initiated wolf poisoning with baits dropped from aircraft. These latter controls worked, particularly the poison baits, and wolf numbers were drastically reduced throughout the 1950s and into the 1960s (Bergerud and Elliot 1986).

To better understand the effect of wolf predation upon Caribou in British Columbia, two carefully monitored wolf control programs were carried out (Bergerud and Elliot 1986; Seip 1992b). Both studies compared Caribou survival when wolves were controlled to survival when wolves were not controlled. Both studies found that calf survival increased with fewer wolves and both studies concluded that low Caribou populations would increase following wolf control.

An elaboration of the relatively simple wolf/Caribou predator-prey relationship was first proposed by Bergerud and Elliot (1986), suggesting a direct link between Moose, Wolf and Caribou numbers. This proposal was elaborated by Seip (1992b) and Seip and Cichowski (1996), and is endorsed today by many field biologists. The wolf/Moose/Caribou link gains its best support in the central interior of the province where, in the late 1800s and early 1900s, Moose were scarce, wolves may have been scarce (although the necessary historical research has not been carried out to fully clarify the status of wolves during this time), and Caribou were relatively numerous. It seems likely that sometime during the early 20th century, wolves began to increase in the central interior; at about the same time (the 1910s), Moose began to increase slowly then increased rapidly during the 1920s and 1930s. While Moose and wolves were increasing, Caribou began to decline in the Tweedsmuir area in about 1920 and in the Cariboo during the early 1930s. The argument is made that an increasing number of wolves preyed both upon an increasing Moose population and on the high Caribou numbers, and the Caribou declined; then, as the wolf population dropped following wolf control, fewer Caribou were killed by wolves and Caribou increased.

This argument, however, does not appear to fit other areas of the province. The western Chilcotin Caribou were declining by about 1910, too early to fit the requirements of the Moose/wolf/Caribou dependancy. In the north, reports from the mid-1930s argued that severe winter weather and excessive wolf predation lowered Caribou numbers over several consecutive winters. Although Bergerud and Elliot (1986) proposed an increase in the Caribou population in the early 1950s, shortly after the initiation of the major effort to control wolves, the historical picture presented here has Caribou increasing again by the 1940s, several years before effective wolf control. It is uncertain which is the better history, although an increase in Caribou by the early 1940s is supported by the very general comments made at the time the by Game Commission. Finally, this author has uncovered no historical evidence from either the Okanagan or the Kootenays to suggest that prior to or while the Caribou declined, there was a corresponding increase in moose and wolves.

5.4.4 Hunting

Native Indians hunted Caribou for thousands of years but, despite their skill as hunters, their kill must have been limited by their hunting implements. The introduction of rifles to Indian hunters by the late 1700s, and their growing use throughout the 1800s, increased the harvest of Caribou. Adding to this, the expanding numbers of new immigrant hunters, especially by the late 1800s and into the 1900s, all with the latest firepower, were killing more and more Caribou; this began to modify any kind of "balance" which may have existed between predators, Indian hunters and Caribou before the advent of firearms.

Caribou are particularly easy to kill: "Caribou are the easiest of all game to hunt, frequently a man can walk up to within an easy shot of them without much trouble, if he goes slowly and has the wind in his favour" (Williams 1916c); "Caribou are more vulnerable to hunting than any other cervid in North America" (Bergurud 1974); while Anderson (1872) and Rosenberg (1928) both discuss the ease of Caribou hunting in British Columbia. This vulnerability not only helps

hunters; it allowed needy families during times of hardship, such as the Depression of the 1930s, to kill Caribou out of season with relative ease (Stevenson and Hatler 1985; Martin 1993). Caribou have also been killed for reasons other than food and their killing has been aided by the gun: Rosenberg (1928), for instance, describing a 1910 hunting trip he took to the Cassiar country, told of a trapper who would shoot six or eight Caribou and leave the carcasses where they fell; the Caribou, as they rotted, attracted certain fur-bearers which the trapper then trapped.

Although there is no evidence supporting a single, universal factor causing early Caribou declines, indications are that hunting with firearms, acting as an additive to the ever-present natural factors, particularly predation, triggered the major Caribou losses observed during the first four decades of this century (also see Bergerud 1978, Bloomfield 1979, Russell et al. 1982, for the affect of later hunting). In support of this argument, the early hunting closures were often prompted by reports from the field that hunters, both Indian and non-Indian, were killing too many Caribou, either legally or illegally; and, in several instances, Caribou numbers began to increase following hunting closures (Figure 11).

Hunting regulations for Caribou, as with regulations for predator control, have a long history in the province. A provision was placed in the 1878 *Game Act* to protect 'cariboo', if supported by local residents; a closed season from January 10 to September 1 came into effect in 1887; a bag limit of "three reindeer, five Caribou" became law in 1890 (changed to five Caribou in 1895); a male-only restriction was initiated in 1893, dropped the following year and reinstated in 1898. For further details of seasons and bag-limits, see Stevenson and Hatler (1985). The comments below cover the few changes which the author believes had some significance in the fluctuation of historical Caribou numbers.

- The first complete Caribou hunting closure in the province was enacted in 1916, to protect Caribou in the Rainbow and Itcha Mountains. Unfortunately, enforcement of the closure was virtually impossible, largely because a change in the process of game protection took place at about that time and the numbers of enforcement staff were greatly reduced. The result was little or no patrolling of the western Chilcotin, which may explain the lack of any increase in these Caribou for the next 20 or so years.

- The 1918 closure in the Kootenays apparently resulted in growing numbers of Caribou throughout the next 10 to 15 years, as reported by Baker (1921), Dunwoody (1928) and Kearns (1932). Without a hunter harvest, Caribou began to increase quickly after the closure. In contrast to the Kootenays, this same closure stopped Caribou hunting in the Okanagan but did little to preserve what remained of those animals. Wahl (1988) was one of the first to propose that uncontrolled hunting was the primary cause of the decline of Caribou east of Okanagan Lake and, although the author believes he was correct, this closure was apparently ineffective and the population continued to decline and eventually disappeared.

- A 1927 closure was enacted for the area south of the CNR railway between Prince George and Prince Rupert and west of the Fraser River, providing protection for Caribou in the upper Chilcotin and the Tweedsmuir Park areas. The response to this closure was not immediate but the populations began to increase within about a decade (Figure 11).

- The Caribou hunting season was shortened in the Cariboo in 1942 and then closed in 1946; there, as in the Wells Gray Park area just to the south and east, Caribou numbers showed an increase following the closure. This increase and the increase described in the previous paragraph was undoubtedly aided by the intensive wolf control program of the late 1940s and early 1950s.

5.4.5 Weather and disease

Edwards (1956) examined the relationship between snow depths and ungulate abundance in the mountains of British Columbia. In a very gen-

eral sense, he determined there were fewer ungulates following winters of heavy snow than winters with a normal snow-fall. However, research into recorded Caribou history suggests that only once did Caribou in British Columbia suffer a severe loss due to winter weather. Caribou in the northern mountains probably declined during the mid-1930s because of a combination of deep snow, cold temperatures and wolf predation. The author believes the population recovered quickly.

Evidence was found of Caribou dying – apparently from disease – within two areas of British Columbia. Several dead Caribou (and moose) were found in the forest near Rooney – west of McBride – in the early winter of 1918; in addition, several Caribou shot in the same area were found to have what appeared to be a lung disease. One such abnormal lung was examined by a doctor in Prince George and a type of pneumonia was identified (Parsons 1918a, b). Parsons 1918c reported there were fewer Caribou in the area than they had originally predicted, and fewer than prior to the outbreak, suggesting the disease may have resulted in a loss of Caribou. However, there is no record of any long-lasting population decline resulting from this disease, nor were there reports of Caribou dying elsewhere. The second record is the finding of "a few dead Caribou" by guide Glen Walters near Clearwater Lake in the early 1930s, just when Caribou numbers were declining rapidly. At the same time and in the same general area, several Caribou were shot but left in the bush because of the flow of abnormally dark blood from the wounds (Russell and Russell 1976). No other reports have been uncovered of dead Caribou at this time and in this area, but disease may have played a part in the decline of Caribou in the Cariboo during the 1930s.

5.4.6 Land Use

Although the author has championed hunter kill in combination with predation as the principle cause of early declines, he believes that slowly, increasingly and inexorably, land use changes had a growing impact upon Caribou habitat and Caribou numbers.

MacDonald (1996) has detailed the progression of human impact upon the land – mining, forestry, agriculture, transportation corridors, hydroelectric developments, recreational pursuits and general human intrusion – as we have expanded into mountain Caribou habitat. The negative influence of these habitat changes on mountain Caribou are applicable to both the northern and boreal ecotypes. Historically, except for human intrusion and firearms, the author does not believe any of these habitat changes had much, or any role, in the *initial* Caribou declines documented in this report. However, by mid-century – the 1950s and 1960s – these changes in land use began to affect Caribou habitat, particularly in the south. The hoped-for increase in Caribou numbers, as predation and hunter harvest were controlled, was dampened by a combination of events initiated by our own growing numbers and our growing needs. By fracturing and fragmenting, degrading and destroying Caribou habitat, we began several decades ago to permanently alter the land's capability to support Caribou; and as we continued this alteration and destruction of Caribou habitat, we watched the decline – and sometimes elimination – of Caribou herds.

6.0 CONCLUSION

Caribou were widespread and numerous when the first Europeans arrived in what is today British Columbia. Since that time, the range for both the mountain and the northern ecotypes has been reduced by approximately 20%, with the major change in distribution occurring in the southern half of the province. Internationally, it has been estimated that up to 60% of the historic range of mountain Caribou in western North America has been lost (I. Hatter, pers. comm.).

Caribou are now fewer in number in British Columbia than two centuries ago, but to attempt a guess at what the Caribou population might have been is risky. However, the author believes that when the first Europeans arrived there was probably twice to-day's 16,500 animals, approximately 30,000 to 35,000 Caribou. Numbers began to decline as early as the late 19th century and this continued into the 1940s. Following these initial

losses, Caribou numbers generally showed some increase in the south but never returned to pre-decline levels. In the north, it is likely the increase in Caribou numbers returned populations to pre-decline levels or nearly so, at least until about 1970.

The author believes that excessive hunting in combination with ongoing predation was the principle cause of early declines of Caribou, but habitat loss from wild fire, severe winter weather and disease may also have been contributing factors. Changing land use practices in British Columbia, precipitated by the ever-increasing human population, has placed growing pressure on Caribou habitat – and Caribou – since the mid-twentieth century, particularly in the south. Populations are low and seem destined to remain low.

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Appendix A. The Queen Charlotte Island Caribou.

INTRODUCTION

The Queen Charlotte Islands, situated off the northwest coast of British Columbia, consist of two large islands – Graham and Moresby – and approximately 150 smaller islands, islets and rocks (Figure A-1). Alaska's Dall Island (the nearest land) lies 49 kilometres to the northeast while Stephans Island is 56 kilometres to the east. These off-shore islands are characterized by heavy precipitation, a relatively warm climate and dense forest growth. The highest mountains on both Graham and Moresby Islands are over 1100 metres, and some of the higher peaks retain snow throughout the year.

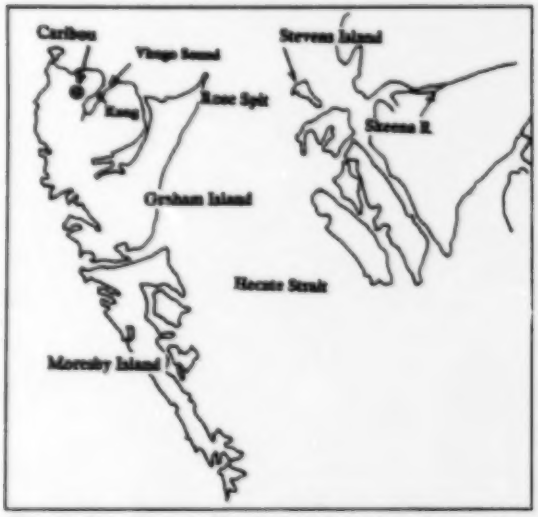

Figure A-1. Queen Charlotte Islands and a portion of the mainland and associated islands.

Land mammals are poorly represented on the Queen Charlottes: only seven species now living are considered indigenous – this excludes the bats – compared to 27 species on the adjoining mainland (McTaggart-Cowan 1989 [all Appendix A references at end of appendix]). Caribou, now extinct, was the eighth native species and their status has for decades been a point of argument: was it all a hoax, were they a late introduction or were they long-time residents?

It was not until 100 years after the first Europeans reached these offshore islands that Caribou were known to exist on northwest Graham Island. Evidence of Caribou was found in an area of low relief and poor drainage with extensive muskeg, wetland, and forest openings; cover consisted mainly of western red cedar (*Thuja plicata*), western hemlock (*Tsuga heterophylla*) and Sitka spruce (*Picea sitchensis*) with a dense understory of salal (*Gaultheria shallon)*, huckleberry (*Vaccinium parvifolium)*, salmon berry (*Rubus spectabilis)*, skunk cabbage (*Lysichiton americanum)* and a variety of mosses (Sheldon 1912; Demarchi et al. 1990). Following the 1878 discovery of Caribou by Europeans, there was a flurry of activity for 30 years: Caribou tracks identified, hair and scats found, specimens killed; then, silence again. The passing of the last Queen Charlotte Island Caribou sometime during the early part of the twentieth century left several questions unanswered: When did Caribou arrive on the Charlottes? How did they reach these offshore islands? How and why did they disappear?

Access to the Charlottes

With no evidence that Caribou survived the last ice age on the Queen Charlotte Islands, the alternative is a crossing from the mainland as the last of the ice receded (George Dawson *in* Seton-Thompson 1900). There is growing evidence of an extensive land bridge between the mainland and the Queen Charlotte Islands during the late stages of the Fraser Glaciation (Clague 1989; Luternauer et al. 1989). Caribou, reaching the mouth of the Skeena River between about 11,000 and 10,000 years BP, would have readily crossed to Graham Island. Once reaching the Queen Charlotte Islands, they faced a mixture of dwarf shrub tundra and developing forest on the lowlands and receding ice in the mountains; the disappearing ice in the uplands was slowly replaced by both alpine and sub-alpine vegetation (Mathewes 1989).

THE HISTORICAL RECORD – EUROPEAN

Although there have been many commentators over the years with much to say about Dawson's Caribou, the following were the major contributors.

Dr. George Dawson. Dawson, a geologist with a broad range of interests, including zoology, carried out a geological survey of the Queen Charlotte Islands during the summer of 1878. On August 21 he reported in his diary: "*Elk (wapiti)* are Certainly known to exist about the north west point of the Island [Graham], but very seldom killed, as not followed inland" (Cole and Lockner 1989). Later, based on his examination of a partial skull and hide, Dawson realized these were Caribou, not Elk.

Alexander Mackenzie. Mackenzie, the Hudson's Bay Company's fur trader at Masset from late 1878 until 1887, supplied the type speciman for Dawson's Caribou. There are differing accounts of Mackenzie's involvement with the collection of this first Caribou speciman, but the most likely is that Mackenzie offered a reward to anyone who brought him evidence of Caribou; a claimant finally appeared with the fragments of a Caribou, including the skull. This specimen passed through several hands and finally found its way to the Provincial Museum in Victoria (Osgood 1901).

Reverend J.H. Keen. Reverend Keen, who took over the Anglican Mission at Masset during late 1890, was an enthusiastic naturalist (*Myotis keeni* and *Peromyscus keeni keeni* were named in his honour); for years he opposed the idea that Caribou were indigenous on Graham Island and only reluctantly changed his mind. Keen had questioned the oldest Haida hunters and, based on their evidence and his own experience, concluded that "no Caribou are to be found in any part of the islands" (Osgood 1901). Long after, Keen (1914) wrote: "How extraordinary was the discovery of Dawson's Rangifer on the Q.C. Islands! I had for years so stoutly denied the existence of deer there that the discovery brought me great personal humiliation."

Ernest Seton-Thompson. It was Seton-Thompson who decided the Queen Charlotte Island Caribou skull represented a new species, naming it in honour of George Dawson (Seton-Thompson 1900). He later expressed reservations about this new species and told Wilfred Osgood of his concerns; Osgood (1902) repeated them to Dr. Newcombe: "the use of the name *dawsoni* is not justified and he says he regrets having proposed it."

Wilfred H. Osgood. Osgood, an assistant biologist with the Division of Biological Survey, U.S. Dept. of Agriculture, conducted a biological survey of Moresby and Graham Islands from 13 June to 19 July 1900. He concluded: "I could find no evidence.that native Caribou ever existed on any of the islands" (Osgood 1901). He did agree, based on evidence supplied by Charles Harrison, that there was a "*possibility* [Osgood's emphasis] that Caribou were killed on Graham Island, but the probability that such was the case is still doubtful." Osgood did not rule out the possiblity that the type specimen had been innocently bartered and brought over from the mainland, for use in native arts; he opposed Seton-Thompson's initiative in creating a new species based on the meager evidence available at the time.

Reverend Charles Harrison. Harrison, an Anglican missionary, was in charge of the mission at Masset from 1883 to 1890, when he resigned. He remained in Masset, however, and at one point asked for a grant of $250 to search for Caribou (Harrison 1904). In a letter of 30 April 1901 to J.R. Anderson (Deputy Minister of Agriculture in Victoria), following a request from Anderson in Victoria's Daily Colonist for anyone with information about the Queen Charlotte Caribou, Harrison declared: "I have lived here twenty years, and know the account [of Caribou] given is quite correct.Three years ago an Indian named Shakwan saw a female Caribou feeding near a lake up Virago Sound.This March a man named Stlinga with his two sons saw the tracks of a big herd near the headwaters of the Malon River. . . Men who were with the man who killed the two referred to in the Colonist are ready to show me the place where he killed them. This is near Lthum, up Virago Sound.". . . (Harrison 1904).

Later, in December 1904, Harrison sent two Indians into the forest west of Virago Sound and they returned after a day and a half, having seen large tracks and bringing scats of a large-hoofed

animal. In March 1905, Harrison, H.A. Collison and five Indians spent 10 days in the forest near Virago Sound; they found Caribou tracks and scats and recovered Caribou hair.

Dr. C.F. Newcombe. Dr. Newcombe, a Victoria physician and collector for several museums, visited the Queen Charlotte Islands at least five times (1895, 1897, 1901, 1903 and 1911). He knew many Queen Charlotte island residents, both Haida and non-Indian and, like Reverend Keen, was sceptical about the island Caribou (Keen 1906). However, by the turn of the century, there was growing international interest in these Caribou and on 8 April 1901, Franz Boas (Fields Museum of Natural History, Chicago) sent a telegram to Dr. Newcombe, offering $150 for an adult male and $50 for a young male or a female (Boas 1901). No Caribou were collected for Boas.

Francis Kermode. Kermode became Curator of the Provincial Museum in 1904 and was anxious to obtain a Dawson's Caribou. One of Kermode's friends was a Lieutenant Bills of the Royal Navy; Kermode had told Bills (and Bills' superior, Commander Hunt of HMS "Shearwater") of these Caribou, adding new information he had recently received from a prospector, J.H. Coates. Coates had prospected the area west of Virago Sound in December 1905 and found tracks and scats of animals which Coates believed to be elk (Kermode 1906); whatever it was, Coates "was positive of a large animal existing on Graham Island". The "Shearwater" was in Virago Sound in the late winter of 1906 and Hunt and Bills, armed with information from Kermode, took a 40-minute walk west of Virago Sound on 22 February 1906; they found evidence of Caribou, including a shed antler (Anon 1906).

Provincial officials were concerned about the fate of these Caribou by 1906. It is likely that Curator Kermode asked Provincial Game Warden Bryan Williams for a no-hunting order protecting the Queen Charlotte Islands' Caribou (Williams 1906a); on 7 May 1906 Williams (1906b) requested a hunting closure, which was not put into effect until late 1908.

Charles Sheldon. Sheldon (1912), a celebrated hunter and well-known writer, visited Graham Island between 26 October and 23 November 1906 in a search for the Queen Charlotte Island Caribou.[1] Sheldon was in the field for 22 days and found old sign of Caribou on 11 days. His surveys were not organized to precisely delineate the extent of Caribou distribution but, based on his record of time and direction of travel, This author estimates that Caribou sign was found within an approximate rectangular area about 6 km by 12 km, and 5–6 km inland from the village of Kung; there was no evidence of Caribou in the restricted sub-alpine lying west of these lowlands. Sheldon believed there were never more than one or two Caribou together, with the occasional calf; there were no deep or well-used trails, nothing more than faint paths along the edge between swamp and forest.

The White/Yoeman specimens. Two years after Sheldon's findings, on 1 November 1908, Mathew Yoemans and Henry White, both Haida natives from Masset, shot three Caribou west of Naden Harbour. Sheldon (1912) described the event: Yoemans and White were hunting in a "large swamp-barren three or four miles inland, midway between the mouth of the Naden River and Kung. . . Near the centre of the barren they saw four Caribou – two bulls with horns, a cow, and a calf." The adults were killed.

Norman Brodhurst provided his recollections of this event to Kathleen Dalzell (1968). Francis Kermode sent Broadhurst to the Charlottes in 1908 to collect a Caribou speciman; he arrived in Masset and shortly after his arrival was approached by Mathew Yoemans, who said that he and Henry White had two Caribou. "I was invited to have some of the meat. The animals had been skinned and slightly smoked to preserve them. The skins looked pretty good to

[1] Charles Sheldon's observations and reporting were so reliable that C. Hart Merriam, chief of the Division of Biological Survey, U.S. Department of Agriculture, had him carry out several biological surveys; this search for Dawson's caribou was done for the Biological Survey Division.

Figure A-2. Mathew Yoemans and Henry White at Masset with two of the three Caribou they shot in November 1908.

me, but they had been cut off at the knees." Broadhurst contacted Kermode, who told him to collect fresh specimens as he did not want the damaged skins. Although Brodhurst hunted where Caribou might have been, he found nothing. With no freshly-killed specimens of his own, he took those provided by Yoemans and White.

On 13 September 1993 the author visited with Henry White's nephew, Henry Geddes, in his home in Masset. Mr. Geddes' account of his uncle's hunt was essentially the same as described by both Harrison and Brodhurst, although Mr. Geddes felt that only two Caribou had been collected. Mr. Geddes was still sensitive to the criticism his uncle and Yoemans were subjected to, as a growing number of people became aware that some Queen Charlotte Island Caribou had been killed. Two pieces of information shed additional light on this subject, and place a good part of the responsibility on museum curator Francis Kermode:

1. The provincial government paid W.E. Collison $100 for three Caribou specimens from the Queen Charlotte Islands sometime during 1908 or 1909 (B.C. Sess. Papers 1910, Public Accounts, 1st July, 1908 to 31st March 1909). It seems likely that Collison, as the Anglican Minister in Masset, was sent the money and he, in turn, paid Yoemans and White.
2. A photograph remains (Figure A-2) showing Mathew Yoemans and Henry White standing beside two antlered Caribou. Part of the right antler of the large bull has either been chewed or broken off (the damage was later repaired [see C. Hart Merriam's photos #4 and #5 in Sheldon 1912]). This photograph does not provide evidence of a senseless

killing, or even killing for food alone: the unskinned heads with the main body skin attached are shown (another photo taken at the same time clearly shows the hides attached to the head). Hunters do not ordinarily go to such trouble when skinning, and this is the care only a taxidermist would require.

It is difficult, 90 years after the fact, to determine with certainty the events surrounding the shooting of these three Caribou. However, the most likely explanation is that Kermode offered – as Franz Boas had done several years earlier – a reward to anyone in Masset who collected a Caribou, and provided instructions on how to skin and preserve the specimens. The author believes it was the reward that prompted Yoemans and White to collect these Caribou.

Later investigations. Subsequent investigations were carried out by professionally-trained biologists intent on discovering some evidence of Caribou. Dr. Ian McT.- Cowan (who replaced Francis Kermode as Provincial Museum Curator) visited the Queen Charlotte Islands in 1935 and reported that Henry White (the same Henry White who had collected the Museum specimens in 1908) had seen Caribou tracks within the past two years (McTaggart-Cowan 1936). Although the odd Caribou may have remained until 1935, red deer (*C. e. elaphus)* were released on Graham Island in 1918 and Rocky Mountain Elk (*C. e. nelsoni)* were released in 1929 and 1930. A cursory observation could have mistaken Elk tracks for Caribou tracks.

Charles Guiguet (summers of 1946 and 1947) and Guiguet with Donald Robinson (March 1957) looked for Caribou, with no success. A.W. Banfield (1962), during the summer of 1961, conducted a comprehensive search but found no evidence of Caribou. He did determine, however, that the bog habitat where Caribou had lived several decades earlier was similar to the bog habitat of some eastern Woodland Caribou.

THE HISTORICAL RECORD – HAIDA

Oral history. On 15 July 1878, George Dawson (Cole and Lockner 1993) was told by Moresby Island Indians near Cumshewa there were "only three kinds of mammals in the *Haida illihie* [the land of the Haidas] viz: Black bears, now in the mountains but common along the shore when the hook billed salmon [*Oncorhynchus* sp.] begin to run; Marten [*Martes americana*] . . . and Otter [*Lutra canadensis*]". Reverend Keen had questioned the oldest Haida hunters during the 1890s and was told there never had been any Caribou on the Charlottes (Osgood 1901). Charles Sheldon (1912) spent considerable time with the Haida people in Masset before he left to carry out his field work in Virago Sound during the fall of 1906: "I found that all were familiar with the fact that tracks were abundant near Virago Sound, but none with whom I talked had seen a track, nor did the Haidas have any traditions about the animal ..." Banfield (1962) interviewed the residents of Skidegate during his visit to the Queen Charlotte Islands: "The Skidegate Indians I interviewed firmly stated that there never had been any Caribou on the Islands."

In an attempt to further understand the relationship between the Haida people and Caribou, this author questioned Mr. Henry Geddes – a Haida elder – during a September 1993 visit. In contrast with virtually every other Haida account, Mr Geddes believed that Caribou had always been part of Haida life on Graham Island. He prefaced this with the comment that everyone might not agree with him, but he was convinced that Caribou had preceeded the first native Indians on the Queen Charlotte Islands.

Mythology. Dr. John Swanton (1905, 1908) lived on the Queen Charlotte Islands from September 1900 to June 1901 and has left a comprehensive account of Haida mythology. He reported 166 mythical tales in his two publications: 94 stories from the Masset people and 72 from the Skidegate area. In this sample of 166 stories, land mammals were referred to in 89 cases and 20 species played a greater or lesser role. Using frequency of reference as an index of importance, Marten was the most important land mammal, mentioned in 27 stories; others were mentioned a

Table A-1. Ungulate remains uncovered in excavations on Graham Island.

Site	Reference	Approx. Age	Unid. Cervidae	Mule deer	Caribou
Masset area	Smith 1919	?	?	?	Some
Blue Jacket Ck	Severs 1974	2–4,000 yrs			4
Honna River	Savage 1971	2–4,000 yrs	15 (3 could be small Caribou)	2	7
CFS Masset	Christensen & Stafford 2000	1300 yrs	-	-	some
Cohoe Ck	Christensen 2000	~5000 yrs	-	-	some

lesser number of times with Fox (*Vulpes fulva*), Panther, Mountain Sheep (*Ovis sp.*) *and Caribou* receiving only a single mention each. All living, indigenous Charlotte mammals (except Caribou) were listed several times, and even the secretive and diminutive shrew (*Sorex sp.*) was referred to three times. Thus, even in mythology, Caribou were of little importance to the Haida storytellers of the late nineteenth century.

Archaeology. Table A-1 summarizes the available archaeological information. Harlan Smith excavated in the Masset area during the summer of 1919 and found evidence of Caribou (Smith 1919), but the material has not been analyzed. Very recent excavations have been carried out on the Queen Charlotte Islands (summer 1998) and more Caribou remains have been uncovered.

This archaeological evidence, with the preponderance of Caribou remains over other identified ungulates, supports the argument that Caribou were an indigenous species.

DISCUSSION

Dawson's Caribou have produced their share of controversy, but a combination of new archaeological and geological evidence leaves no doubt that Caribou George Dawson first heard of in 1878 had lived on the islands for about 10,000 years. A slowly-changing climate led to an environment quite unsuitable for these large ungulates and they eventually disappeared (Banfield 1962). Although their passing coincided – more or less – with the arrival of Europeans, and their going may have been hastened by the killing of three adults for museum specimens, these incidents are of little significance. Faced with an unfriendly climate and an increasingly unsuitable habitat, their days were numbered.

All archaeological material excavated on the Queen Charlotte Islands has not been fully analyzed, yet there is a suggestion that Caribou were of little importance to the Haida people after about 2000 years BP. If there was a major decline in Caribou numbers sometime prior to that, this coincided with a marked change in the climate exemplified by cooler, wetter weather favouring the development of western hemlock and red cedar forests in the uplands (Mathewes 1989). Haida mythology and the majority of Haida oral history tends, indirectly, to support this conclusion. As the population of Caribou dwindled to near-extinction they became, for all intents and purposes, of little use and were ultimately forgotten by the Haida people. In addition, and this is the author's own conjecture, it is possible that as the forests of cedar developed and the Haida craftsmen improved their large, ocean-going canoes, travel across Hecate Strait increased and the use of ungulate parts from the mainland became more commonplace. Moose and Elk skins (Tolmie 1963; Howay 1990), goat (*Oreamnos americanus*) hair, goat wool and goat horns (Beal 1989), mountain sheep horns (Cole and Lockner 1993), as well as elk and deer antlers (Osgood 1901) were all prized by the Haida people.

Grant Keddie (pers. comm.) has suggested another reason for the scarcity of early Caribou references from the Haida people: the extreme trauma experienced by native Indians following European contact resulted in the loss, amongst a long list of cultural attributes, of much history. Disease, alcohol and the displacement of families and individuals from their traditional homes all left little to remember.

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